"I, John Wallace Spencer, hope to prove, using scientific data, that UFOs really do exist, where the extraterrestrial visitors come from, what they are doing here on earth, and where their hidden laboratories and housing facilities can be located."

No Earthly Explanation

by John Wallace Spencer

author of the world-famous
Limbo of the Lost

Illustrated with 16 pages
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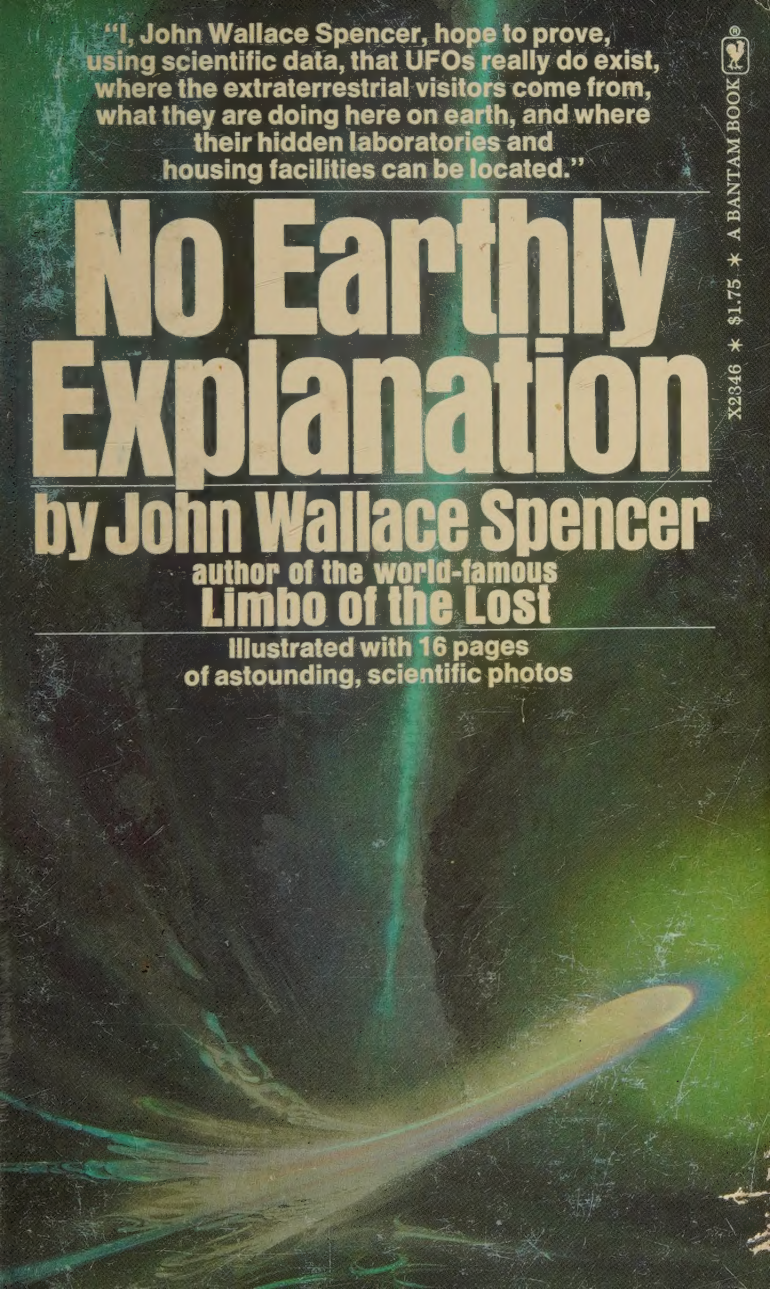

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NEW EXPLANATIONS FOR THE UNSOLVED RIDDLES OF THE EARTH AND THE UNIVERSE BY THE BESTSELLING AUTHOR OF *LIMBO OF THE LOST—TODAY*

This book was written chiefly because of the recurring question asked about disappearances of ships, boats, planes and people in the Limbo of the Lost, also known as the Bermuda Triangle or the Devil's Triangle. Without the slightest warning, without pattern, without logical reason, and with no earthly explanation . . . tragedies continually occur. What is the answer?

John Wallace Spencer is a reporter, not a scientist. Yet, like scientists, he deals in facts. Over the past fifteen years on television, radio and in newspapers and books, he has always strived to accurately report all pertinent information about a story so that the public can reach an intelligent conclusion.

NOW HE HAS THE ANSWER.
IT IS IN THIS BOOK . . .

Bantam Books by John Wallace Spencer

LIMBO OF THE LOST—TODAY
NO EARTHLY EXPLANATION

No Earthly Explanation

MANKIND: A SPACE EXPERIMENT

John Wallace Spencer

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NOT ONE WORD HAS BEEN OMITTED.

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NO EARTHLY EXPLANATION

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Preface

My first book, Limbo of the Lost, sometimes called the story of the Bermuda Triangle or Devil's Triangle, is considered a remarkable success in publishing circles. Hundreds of radio and television interviewers from coast to coast asked many times to what I attributed the book's great attraction. The answer is that the information I presented is one hundred percent factual and therefore at no time have I ever been afraid to openly discuss the stories of the planes, ships, boats, and people that mysteriously disappear off the coast of the United States.

I deal in facts and over the past fifteen years was a television, radio and newspaper reporter always striving to accurately report all pertinent information about a story so that the public could reach an intelligent conclusion. As a result of my training, of only dealing with facts, I cannot list myself as an advocate of science fiction. Please do not misunderstand this to mean I am putting down science fiction buffs; I am not. It's just not within my area of interest.

Since 1945 I have made a study of UFO's as an amateur, as a professional while in the United States Air Force and as an official investigator for the National Investigations Committee on Aerial Phenomena (NICAP). I have been generally dissatisfied with the quality of some books and publications released to the general public under the guise of UFO reporting. This printed garbage is detrimental to the UFO phenomena study and falls into several distinct categories: science

fiction presented as a fact; outright falsification of information; overactive imaginations and sketchy incomplete data; and as for the majority, nothing more than cheap sensationalism. With the exception of a few good books and publications the public is being conned right out of their money drawers. This situation is not reserved only for writers "in favor of UFO's"; the "I do not believe in UFO's" group has just as many charlatans cranking out misleading manuscripts.

During lectures I am constantly being asked, how can a person tell which publications are good and which are trash? Most intelligent readers can easily recognize the sensational treatment given to UFO stories by some of the national tabloid newspapers. The low caliber of their reporting and reputation is well known and their disgraceful headlines speak for the quality of the stories. Many of the magazines at your local book stores or through subscription do little to help and a lot to hurt the investigation of UFO's. The easiest method to determine the quality of the stories is not by the cover or table of contents but rather by scanning the different pages of ads. If the advertiser has designed his ad to reach the perverted, sick mind then what can you expect from the rest of the magazine? Now to get to books, both hard-cover and paperback. This is the toughest category in which to recognize journalistic fraud. A good general rule of thumb is, know the author. Who is he? What does he stand for? What is his life's record? Does he have an overactive imagination? Is he reporting information or trying to be an authority without credentials? In short you have to be the judge of whether the author is accurate and thought-provoking or just simply jumping on the UFO phenomena bandwagon because there is a dollar to be made.

I dedicate this book, No Earthly Explanation, as a realistic, scientific, accurate up-to-date in-depth study of the UFO phenomena. It was written from the point of view of a report so as to be informative and educational but more important, good entertaining reading for people who want to know the facts about UFO's.

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1

Year of the UFO Resurrection

A NEW WAVE BREAKS OUT

The year 1973 may well go down in UFO history as the year of the "resurrection". The wave broke out on December 27, 1972, near the town of Lexington, Alabama. By the first weeks of January and on into February hundreds of people reportedly observed UFO's over Florence, Athens, and other northwestern sections of the state. A steady stream of curiosity seekers converged on the area of the sightings. Every night cars would park along roadsides in the region, occupied by people with cameras, binoculars, and flashlights; several would-be witnesses even brought guns.

While this was going on, similar dramas were unfolding in hundreds of towns and cities throughout the United States in southern Rhode Island, Wisconsin, Illinois, Pennsylvania, Ohio, North Carolina, and South Carolina.

JANUARY

Maryland

A truck driver, Gerald Summey, operating out of Charlotte, North Carolina, said he had been followed

on numerous occasions by flying saucers on Bypass 29 between Charlotte, North Carolina, and Harrisburg, Pennsylvania. He said the object appeared to be oval shaped, glowed like a flourescent light and did not give off any noise. Several times the object followed him out into the mountains; at least a dozen fellow truck drivers said they also saw the UFO's while riding with Summey.

On January 17, 1973, a local newspaper assigned a photographer and reporter to follow Summey on his journey toward Harrisburg. Near Thurmond, Maryland, Summey and the newsmen observed and photographed a sparkling oval object which appeared almost like a ferris-wheel spinning, its lights a blur of rosy red and greenish white. The reporter stated that the UFO was not a plane, a weather balloon, or stationary light.

South Carolina

Police in Cherokee County, South Carolina, received so many UFO sighting reports during January and February of 1973 that they stopped sending cruisers out to investigate.

According to local police, the sighting reports had been in the hundreds, ranging from hazy, distant sightings to close-up, detailed descriptions. The objects were described as cylindrical, cigar-shaped, triangular, and round like a saucer with a cabin on top.

FEBRUARY

Missouri

Early in February, 1973, and continuing into the summer, hundreds of sightings erupted throughout southeastern Missouri. In and around Piedmont, Missouri, 136 miles south of St. Louis, nightly reported UFO observances kept the police jumping. Strange shadowy objects gliding under the water of Clearwater Reservoir also got a lot of play.

It all began when Clearwater High School Basketball Coach, Reggie Bone, and five members of his team

were returning from a basketball tournament in Essex on the evening of February 21, 1973, when they saw a UFO. The object followed the coach's car along route 49, illuminating the highway in front of it.

According to Bone, he was driving on U.S. 60 near Elsinore, Missouri, when he and his passengers first saw a bright shaft of light beaming down out of the sky. About nine miles south of Piedmont, near the intersection of route 21 and highway 34, he stopped his car on the shoulder of the highway and got out to observe the bright, silent object.

It looked as if it was about 50 feet off the ground and about 200 yards away, with four flashing lights, red, bluish-green, amber, and white, possibly coming from portholes. They watched the UFO for about five to ten mintues; then it went directly up in the air with absolutely no noise and just disappeared over a hill.

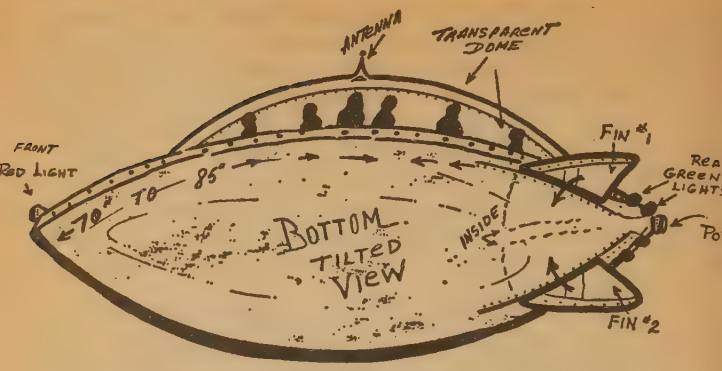
Oregon

In addition to Missouri, UFO activity was reported in Massachuetts, Georgia, Pennsylvania, and Rhode Island. Four adult residents of Portland, Oregon, reported observing a strange saucer-shaped object maneuvering 300 feet over their heads on the night of February 23, 1973. The craft was flying so low and close, according to witnesses, that it was easy to see its tremendous size. The UFO moved slowly in an arc direction across and in front of the four people at about thirty to forty miles an hour.

Somewhere Over the United States

At the request of the witnesses their names and exact location of the sighting have been omitted from the following NICAP case material for obvious reasons.

The pilot and co-pilot of an unscheduled charter cargo flight became part of the ever growing list of experienced observers to sight a UFO. At 2:30 a.m. (CST) the flight crew of a DC-8 cargo jet had just started their descent from twenty-one thousand feet. They were cruising at 510 mph., on a bearing of approx-



imately 195 degrees when the co-pilot nudged the captain to point out a craft off to their right. At first both men thought another commercial aircraft was matching their course and speed about five thousand feet away, below the leading edge of their right wing. This thought was quickly abandoned when the object suddenly rose almost straight up and closed in on the DC-8 until it was no more than an estimated three hundred yards. The crew immediately attempted to establish radio contact with the unidentified craft, without success.

Both men could easily see the UFO in the bright moonlight at the relatively close distance. They said it was more round in shape than oblong and described it as looking like a flounder lying on its side. The craft was silver and seemed to be constructed of a highly polished metal that reflected the moonlight. The body of the UFO had two very short stubby fins which looked as though they could be folded into the body. These fins had amber-colored, steady lights on the leading edge and another set of amber lights located above and below the craft's body. A transparent dome was located on the top center; however, no glow could be seen coming from within (such as from instrument lights). Both DC-8 crewmembers agreed they thought they had seen two or three figures moving about inside. The rear section of the UFO had two vertical fins projecting

from the top edge. The fins were on either side of what appeared to be an exposed jet engine pod. None of the fins appeared to have ailerons or other moving parts. The pod did not emit either gases or a glow such as a jet engine would exhibit. Both pilots judged the object to be approxmiately 75 to 85 feet in length and about 40 feet from the tip of one horizontal fin to the other. The bottom of the craft was flat and smooth with no protrusions, landing gear wells, or maintenance hatches.

Once the pilots realized the object was unlike any conventional aircraft, they switched on the radar equipment. The UFO appeared as a blip on the edge of their scope. As soon as the radar was operating the UFO seemed to react by abruptly rising straight up and crossing sideways to a position just above their plane, passing temporarily out of view. It then reappeared to the left of the jet settling just below the leading edge of the wing. The unidentified craft stayed in that position for only a short time before dropping below and behind, where it was once again momentarily out of sight. Suddenly, three hundred feet below, the UFO shot by at twice the speed of the DC-8, approximately a thousand miles an hour. The unidentified craft performed several up and down maneuvers before turning to the right and speeding out of vision in the direction from which it first appeared.

The DC-8 crew continued to track the object on their radar until it went off the scope at a distance of about fifty miles. The captain explained that the UFO went out of the sweep range of the radar antenna, which is located in the nose of the DC-8, because it covers about 160 degrees but only to the front of the craft.

During the entire sighting duration of approximately eighteen minutes the UFO maintained its distance and did not attempt to close in, nor was any electrical, radio or instrumentation disturbance noted. The captain said that it just seemed to be looking the plane over and once satisfied, it simply zipped away.

The co-pilot filed an official report with the USAF

and even though the Air Force says it no longer officially investigates UFO's, both men were interrogated and several sets of forms had to be filled out. They were later informed that the government's investigation was completed and that they should not discuss the matter any further except with authorized personnel.

MARCH

Pennsylvania

As Americans were turning their calendars to March, 1973, newspapers throughout the nation were full of stories about the epidemic of sightings. Confusion seemed to prevail as communities throughout a three-county area of eastern Pennsylvania reported formations of UFO's criss-crossing the sky in "Independence Day" type displays. Police in Northampton, Berks, and Monroe counties recorded hundreds of sightings.

On March 1, one of the major sightings of the 1973 wave broke out over a small lake-side community in eastern Pennsylvania near the New Jersey border, Saylors Lake. At least a dozen witnesses, including State Trooper J. Hontz, observed thirty-nine objects passing over the lake during the evening. Trooper Hontz said he saw four of the objects pass over the area at an altitude of about fifteen hundred feet, going from west to east. Most of the UFO's had white lights while a few had red or blue lights. Hontz stated, "But don't ask me what they were, it was like a Christmas tree flying in the air."

Twelve residents saw thirty-nine round objects, some in groups, pass over Saylors Lake at fifteen-minute intervals between 7:25 p.m. and 10:45 p.m. The UFO's moved in slowly from the west, then picked up tremendous brusts of speed and shot off until they were out of sight. It took about three minutes for the objects to pass over the entire lake. All of the eye and ear witnesses agreed that the objects could not be conventional

aircraft for no noise was detected and no sign of sparks or flame could be seen.

Air traffic controllers at nearby Allentown-Bethlehem-Easton Airport said their field was not equipped with surveillance radar and thus had no way of tracking the strange objects.

Officials at the New York Traffic Control Center, which monitors east coast flights, said they had no knowledge of the UFO's, but added that if the craft were flying at an altitude of 1,500 feet or less they would have been difficult to detect on their radar scopes.

Major Larry Brown, a public information officer at the Pentagon, reported to local officials that the Air Force was conducting no operations in the Stroudsburg area. The Air Force had been out of the unidentified flying object business for a long time. Major Brown suggested that sightings should be reported to the scientific community.

Twelve days after the thirty-nine unidentified objects were seen, on March 13 more residents of Saylors Lake reported observing twelve disc-shaped objects over the lake around 7:15 p.m., illuminating the sky "like daylight."

When an Air Force spokesman was asked what the government had to say officially about the forty-two unidentified observed objects by multiple witnesses over Saylors Lake he replied, "I'm sure there's a simple answer to what you saw; there usually is, you know."

Sightings were coming in fast and furious from the vicinity of Kingston and other southern Rhode Island communities, Easton and Nazareth, Pennsylvania, Los Alamitos, California, and from three astronomy students at the Belknap College Observatory, New Hampshire.

Ohio

Twelve members of the Mt. Calvary Methodist Church in Canton, Ohio, to this day are still puzzled by

the "unidentified something" they observed darting above eastern Stark County on March 14, 1973.

The mysterious object was first spotted by some parishioners while driving home around 9:30 p.m. from an evening service at the church. Unknown to the first group of witnesses, other parishioners, including the church's pastor, Rev. Johannes Mass, were also observing the UFO at approximately the same time.

Rev. Mass and his wife said they were sitting in the living room of their home at the church when they saw red and white flashing lights through their window. They thought at first it was an airplane but then noticed it remained stationary. They estimated it to be a thousand to fifteen hundred feet away, across a small valley from their home and either on or just above the ground.

According to Rev. Mass, he and his wife figured the craft must have been circular or saucer-shaped because of the position of red and white flashing lights which went around the object. The craft did not make any noise.

Other witnesses gave similar accounts of seeing a mysterious object with lights, darting about or hovering over various sections of the county on the night in question.

Illinois

On March 22, 1973, about 9:15 p.m., Willis Hughes, a turbine operator for the Central Illinois Public Service Company at Grand Tower, Illinois, telephoned the on-duty operations engineer, Oscar Wills. Huges told him he had been watching a stationary, strange-looking aircraft hovering just north of the power station.

Wills, thirty years with the company, went outside and saw a saucer-type craft about three hundred yards off, over the sixty-six thousand volt transformer yard at an altitude of approximately fifteen hundred feet. The UFO had between thirty to thirty-five pulsating lights going around the edge which changed from piercing

white to bright red to amber. The oval object appeared to be about thirty feet in diameter.

Walking cautiously to within a hundred yards of the craft, Wills stopped and decided to retreat to the main building in order to get help if needed. As he started back he saw the UFO move toward the west side of the plant, across the Mississippi River and hover over the water intake pump. He watched the craft for about five minutes before the ringing of the company phone forced him inside the office. When he returned, the object was gone.

Huges said he watched the object from his home, approximately a mile and a half from the plant, for nearly twenty minutes. Wills observed the UFO for only about ten minutes but said he got close enough to state it appeared to be solid and not made of gas.

Four jet fighters made several high speed passes over the vicinity of the electric plant within thirty minutes of the sighting. However, an Air Force spokesman from NORAD stated that no planes had been scrambled to the area of the Power Station and no UFO reports had been received.

APRIL

California

The Los Angeles, California Basin area experienced an unprecedented number of unexplained sightings between April 1, and 8, 1973. Many of the sightings were reported by multiple witnesses who generally described "bright objects" moving across the skies at tremendous speeds.

On April 3, a number of witnesses living throughout the Los Angeles area observed what most described as a series of bright white lights, usually in pairs, traversing the sky from west to east starting at 7 p.m. and lasting for fifteen minutes.

One eye witness, a military pilot, said the UFO's were "much too fast" to be conventional airplanes.

Missouri

Kenneth Pingel, 23 years old, a commercial pilot with more than five thousand flying hours, was returning to the Farmington, Missouri Airport with another experienced pilot, Marvin Colyer, an anesthesiologist at Farmington Community Hospital. It was about 10:30 p.m., on April 12, 1973, when they first noticed a strange, bright, white, circular object off their left wing. It seemed to pace the airplane as it cruised at 150 mph at 3,500 feet.

Pingel said, "We flew our traffic pattern and were about to land on the north runway. We were making our final approach when we both saw the object as it moved across the clear night sky. The UFO gave off a beam of white light as it appeared to be moving at us at a high rate of speed. I pulled out of the landing approach and as I did the UFO immediately stopped and reversed direction." According to Pingel he chased the mysterious object at 140 mph for several miles before it disappeared.

Other residents of Farmington also reported seeing the strange light that night. Pingel stated, "We're both qualified for night operations and I've flown many nights under all kinds of conditions. This was definitely not a star or any kind of airplane and until someone explains to me what it was, I guess I'll have to say I saw a UFO."

By April, researchers and Ufologists from every point of the compass converged on UFO sighting areas. A research team from Southeast Missouri State College, located at Cape Girardeau, Missouri, and headed by Professor Harley D. Rutledge, chief of the Physics Department, conducted a three-week scientific study of the sightings in the Piedmont, Missouri region.

On April 13, 1973, Professor Rutledge reported observing four possible UFO's, three from the north and one from the south. At 7:15 p.m. he saw the first mysterious light source, "a white light, brighter than any of the stars," but could not see any discernible

shape. Rutledge said it flew past in front of him and his team of faculty members and students and stayed in sight for about three minutes. Twelve minutes later the second sighting occurred. At 9:20 p.m. the third, and at 10:45 p.m., the last. A check with the FAA disclosed that no airplane flights were recorded over the area during these times.

According to Professor Rutledge the mysterious lights seem to follow the VOR flight paths (very high-frequency omnidirection radio range) used by pilots for electronic navigation. Two of the VOR beacons intersect at a location where many of the mysterious lights have been observed.

UFO WAVE BELIEVED OVER

Sightings of UFO's continued trickling into NICAP and APRO headquarters throughout the remainder of April on into late August. Ufologists everywhere in the world believed the short-lived, 1973 wave was over.

AUGUST

Georgia

Suddenly on August 30, 1973, like a summer storm striking without warning, reports of UFO's broke out across Georgia in a chain reaction sweeping through scores of towns and cities extending from Valdosta, Georgia, north to Macon, with some sightings reported southeast of Albany in the Waycross area.

A Georgia Highway Patrol Trooper stationed in Albany said he watched flashing lights for five or ten minutes. He said they were in the sky most of the night; however he had radio duty and had to get back inside the police station.

The Trooper recalled, "There were as many as four of the things in the sky at one time. They would hover over the city, then move back and forth." He described the UFO's as a "clear light" in the sky that

changed colors from red, green, and orange to yellow and flashed at irregular intervals.

He said, "People first saw the UFO's over Dawson just before midnight but the first reports didn't start rolling in until about 12:20 the morning of the 31st. Once the reports started, they kept up all through the night."

A small group of government workers were driving into town on U.S. 118 when they spotted two bright unidentified objects. They reported the sighting to local police, who in turn observed colored lights in the sky that were obviously not stars, aircraft, or any other known familiar objects.

At 12:40 in the morning the Dawson Police telephoned the State Patrol at Albany and requested the Naval Air Station there to be alerted. Within hours, switchboards within a dozen cities and towns along a 100 mile strip from southern and central Georgia were flooded with calls from citizens who had spotted the multi-colored lights moving silently throughout the night sky.

Macon police officers on patrol radioed a report into the station at 2:28 in the morning that they had seen a UFO with about six red and green lights on it. Later sightings seemed to follow a pattern with reports of UFO's over Dawson at 3 a.m., Camilla at 4:35 a.m., and Valdosta at 5 a.m.

As news spread on police network and citizen band radios, newsmen, community officials and law enforcement personnel hurried to the sites of the reported observations and in many instances saw for themselves the vividly colored lights, many stationary, some moving slowly, some performing erratic gyrations.

One news reporter who arrived at an observation point outside Albany shortly after 1:00 a.m. said the lights flashed in the sky, changed colors, made sudden erratic movements and eventually disappeared at

tremendous speeds in a northerly direction. The display of mysterious lights lasted for almost two hours.

The Naval Air Station advised Albany police that all aircraft at their facility were on the ground and had been since 10:45 the evening of August 30 and no flights were conducted before 8:30 the following morning. Most of the morning sighting reports for August 31 stopped coming before sunrise.

Sightings were reported at Cordele, Georgia, and in the vicinity of Warner Robins Air Force Base. Officers at Warner Robins said no planes were sent up to investigate because "we didn't have any planes to send."

An information officer at the base noted that the Air Force no longer investigates UFO's on an official basis and has not since the discontinuance of "Project Blue Book."

For weeks reports of UFO's had been coming in from Central and South Georgia, Alabama, Tennessee, and Florida. The reports came from civilians, military policemen, local law enforcement officers, and state troopers.

A state patrol trooper based in Manchester, Georgia, said a UFO whisked past his patrol car going so fast there was "no way" he could get a close enough look to properly identify it.

SEPTEMBER

More in Georgia

Early on the morning of September 4, 1973, near Manchester, two state troopers watched a lighted object for two hours. It was primarily white with one blue light on each side. The troopers said the object was difficult to make out and gave off occasional flashes of light that seemed to illuminate the entire sky. They also said the object moved with abrupt turns.

Lt. B. W. Fields and another policeman from Chatham County Police Department watched a UFO for about ten minutes. Fields said the object hovered approximately five thousand feet above the ground and gave the appearance of a mercury vapor light. Three minutes after the object disappeared from their view, calls describing the exact same object began coming in from residents of Bloomingdale, about eight miles northwest of Savannah, Georgia.

During the early morning hours of September 8, 1973, two Army military policemen stationed at Hunter Air Force Base near Savannah reported a dramatic encounter with a UFO. The men were on routine security patrol around the perimeter of Hunter, an obsolete base scheduled for complete shutdown.

Military policeman Spec. 4 Bart Burns, 22, a former helicopter crew chief, and Spec. 4 Randy Shade, 23, said that they initially spotted the object at about two thousand feet and then at a high rate of speed the UFO dove at their patrol car. It had "quick flashing lights" predominantly blue, white, red, and amber and it just hovered about two hundred yards above their vehicle, which was now in a ditch. The saucer didn't make a sound and no portholes could be seen.

It took about fifteen minutes, but the frightened soldiers got their patrol car back on the road and raced to headquarters with the UFO pacing behind. They said the object disappeared shortly before they reached headquarters.

On September 9, a Spalding County deputy answered a call reporting an object hovering over a house. The deputy radioed his office that he saw "two red lights descending slowly to earth" and then the lights disappeared.

At 4:30 on the morning of September 9, a three-man news team from an Atlanta television station were setting up their equipment outside the State Partrol of-

fice at Manchester, Georgia. The newsmen were going to interview two state patrolmen who had reported seeing UFO's the previous night.

Suddenly they noticed two small orbs of light appearing much brighter than the surrounding stars. One of the lights dimmed and seemed to move away, while the other became brighter and displayed blue, red, and yellow lights. The mysterious object remained stationary for the next hour and a half until sunrise.

The cameraman, Daniel Keever, a professional with fifteen years experience, started filming the lights and shot seventy-five feet of 16 mm color motion picture film (ASA 500) of the object using a 120 mm zoom lens focused on infinity. He waited thirty minutes and shot the remaining seventy-five feet of film.

The brightest star (Sirus) in the area was placed in the camera's view-finder during the time of the filming but did not produce an image and there were no bright planets in the area either.

By the third week of September, the Georgia sightings had largely diminished, although reports from other states continued. Dozens of UFO's were reported over Michigan towns and cities not only by residents but also by government officials. In Alabama sightings were reported by police in Carrville, Notasulga, Tuskegee, Auburn, and Lanett.

Officer Keith Broach of Auburn, Alabama, said he saw something the size of a large airplane glowing in the sky. When he first saw the UFO it appeared to glow red and white, then it changed to green and to all white before it flew away at great speed.

Other police officers from Auburn also reported seeing UFO's. Patrolman Al Baker said he observed a streaking light that convinced him that flying saucers exist.

Auburn Policeman Jack Walton looked very serious when he said he was not going to tell people that what he saw was a flying saucer with little green men inside, but it was surely some form of UFO.

Dave Maddux, a policeman in Lanett, Alabama, reported a large strange looking object that flew to within 150 feet of the ground, then it went up and disappeared over a hill. Meanwhile, Sgt. Wayne Meadows, also of Lanett police, said that he witnessed an object flying in the sky that was not a plane, helicopter, balloon, or star.

Sgt. Mid Giles and Jim Reynolds, two patrolmen of the Notasulga, Alabama, police reported they saw a glowing object hovering in the sky that they first thought was a weather balloon. Suddenly the UFO zipped off at a tremendous rate of speed. They both are certain that it was no regular aircraft.

Policeman William Clayton and auxiliary policeman Jimmy Smith of the Carrville, Alabama, police and officers Steve Segrest and Wayne Sexton of the nearby Tallassee, Alabama, police all observed a UFO in flight. All the eye witnesses agreed that they didn't believe the object was man-made mainly because it didn't look like anything they had ever seen before.

A spokesman from Maxwell Air Force Base in Montgomery, Alabama said officials there had no explanation for the sightings.

A statement issued by the office of the Secretary of the Air Force simply stated, "No UFO report investigated and evaluated by the Air Force has ever given any indication of threat to our national security."

UFO PANIC

World-wide reports spanned a broad range of events, from encounters with humanoid creatures to unknown objects spotted by pilots and tracked on radar. Few areas of the country from the Northwest to the Northeast, from Florida to California, were spared by the wave which spilled over into Canada. Policemen, news photographers, and private citizens tried to

take pictures of the puzzling UFO activity, rarely with success.

As UFO reports flashed on news wires across the nation, an atmosphere of curiosity and uneasiness swept many communities. Some Louisiana mothers kept their children home from school until the publicity died down. A woman in Maryland wanted to find out what to do about the rash of reports. She said she represented a group of neighbors who were upset by the many news stories and radio bulletins. An Ohio newspaper reported that a woman driving toward Cleveland was startled by a "green glowing object" that passed near her car and appeared to land in some trees. Fearful that the object was radioactive, she rushed home and called police.

According to a story in the Los Angeles Times, a police official in Mississippi described local citizens as "getting hysterical." He said, "There are many people here who are skeptical of some of these reports, but that doesn't mean they aren't afraid. . . . .many are afraid to come out at night." The same story quoted a Mississippi woman as saying she and her friends were doing all their shopping in the daytime and making sure their children did not leave the house at night. She stated, "We don't want to take any chances."

Apprehension temporarily gripped the community of Longview, Texas, in mid-October when silver strands of an unknown material fell from the sky in various sections of town. Police phone lines were jammed by callers who had read of recent UFO sightings in the area and were worried that the strands might be a dangerous substance from outer space.

Dr. Joseph Breuning, sociologist at the University of Mississippi was quoted by Associated Press as saying that the problem of panic is still a problem. People have never forgotten the Orson Welles broadcast of Sunday evening, October 30, 1938, and the panicky effect it had on millions of Americans when they heard the radio announcement that alien visitors had landed in New Jersey.

Apparently, Dr. Bruening was not alone in this conclusion. Two radio stations in Chattanooga, Tennessee, canceled plans to air the "War of the Worlds" program on October 30, 1973, due to the amount of excitement caused by UFO reports in the Southeast.

In a poll taken by the Chattanooga News-Free Press, many people expressed apprehension about UFO's. If an invasion of alien creatures actually happened, one man said, "I think I would be scared silly." A woman who said she was a strong skeptic about UFO's admitted that actual confrontation with UFO occupants would surprise and scare her. She added, "I guess I'd faint." Another woman interviewed in the poll made the same comment, "I'd probably be petrified." Her view was shared by men and women alike, some of whom said they would not hesitate to use firearms if they felt threatened. One man said he would grasp any weapon he could find if a strange creature "exhibited hostile behavior."

FINALE OF THE UFO WAVE

The 1973 UFO wave ended in October with a finale of sightings never before equaled in the history of the world. Some of those sightings, the best, most dramatic and highly documented cases ever investigated, are as follows:

OCTOBER

Mississippi

Highway patrolmen, policemen, and a sheriff all reported seeing strange flying objects over northeastern Mississippi on the evening of October 3. One of the most reliable sightings happened at 8:30 as Mr. and Mrs. G.F. Brown were driving near Tupelo, Mississippi. Suddenly they spotted a strange flying object with flashing green, red, and yellow lights. They pulled their car over to the side of the road and stopped to observe the craft.

A short time later National Park Ranger Thomas E. Westmoreland, three other rangers, and a deputy sheriff, while on patrol, saw the couple's parked car and stopped to investigate. As the Browns were telling them about the UFO, the officers themselves saw the mysterious object.

Ranger Westmoreland reported, "It was approximately a thousand feet in altitude and roughly the size of a two-bedroom ranch house or a little smaller." The lights were not the standard beacon type or the kind you see on airplanes, but circular and continuously rotating.

Westmoreland, a ranger for the Tupelo subdistrict of the Natchez Trace Park and an amateur astronomer, said, "I have been dealing with the public for years and I know people exaggerate and see what they want to see, but I know I saw this."

One of the most provocative UFO experiences ever reported, the alleged "abduction" of two fishermen at Pascagoula, Mississippi, continues to baffle investigators, who have used hypnosis, polygraphy, and other techniques in an attempt to verify or discredit the story.

The bizarre report came to light late Thursday night, October 11 when two men, Charles Hickson, 44, and Calvin Parker Jr., 19, appeared at the Jackson County sheriff's office in Pascagoula and told sheriff Fred Diamond and his deputies they had been seized by three creatures who emerged from a flying object near the pier where they had been fishing. According to their account, Hickson was grabbed by two of the creatures and "floated" into the spacecraft while the third creature transported Parker, who "went limp" and fainted before reaching the object. Once inside, Hickson said he was subjected to some form of physical examination by a football-sized device that reminded him of a "big eye." After the examination was completed, both men were returned to the river bank uninjured.

Hickson's description of his alleged captors seemed straight out of a science fiction novel: bodies

with wrinkled skin, claws instead of hands, feet rounded like an elephant's, cone shaped projections where ears and nose should have been, a slit for a mouth, but nothing to indicate eyes.

Hickson described his examination as painless and said he seemed to be suspended in mid-air while it was conducted. He reported the interior of the craft was brightly illuminated but devoid of any features of furnishings. He said he was sure they were "going to take me away."

The drama began, according to both men, sometime between 8 and 9 p.m. when a "buzzing" sound caused them to turn around while they were fishing at the edge of the Pascagoula River. As they watched, a blue light approached and materialized into an elongated object that hovered just a few feet off the ground an estimated 20 yards behind them. Some kind of opening appeared at one end of the object, and the three occupants disembarked. Before they could resist, the creatures had crossed over and taken hold of the two men.

Hickson estimates he and Parker were inside the strange object for perhaps 15 or 20 minutes, although he had no way of knowing for sure. No conversation took place, either between Hickson and Parker or between the men and their kidnapers. The only sound Hickson could remember was a "mumbling" made by one of the creatures and he heard this only once.

After the incident, Hickson and Parker debated for almost an hour as to what they should do. Hickson was quoted as saying he was so "weak-kneed I think I fell over;" he finally went to his car and took a few swallows of whiskey from a bottle he left there. It was his first drink that night; Parker does not drink at all.

On Saturday, October 13, both men were interviewed by Dr. James Harder, engineering professor at the University of California at Berkley, and Dr. J. Allen Hynek, professor of astronomy at Northwestern University. Harder used hypnosis to regress the men back through the alleged experience. On October 26,

the day the two men were scheduled to undergo lie detector tests, Parker was hospitalized in his hometown of Laurel, Mississippi, for a "nervous condition." He was released four days later, the same day Hickson took a polygraph at the sheriff's office in Pascagoula. Scott Glasgow, polygraph operator for the Pendleton Detective Agency of New Orleans said, "Test results showed Hickson honestly believed he had experienced what he reported."

On the basis of available information, one of four possible explanations appears most likely for this case:

1. The events occurred as reported.
2. The witnesses were lying but were able to do so without detection by polygraph.
3. The witnesses were the victims of a hoax.
4. The witnesses experienced some form of hallucination or dream that was extremely real to them.

Ohio

Hundreds of people including more than twenty-five policemen watched fast flying, reddish orange, 50-feet wide oval shaped objects over the Dayton and New Lebanon, Ohio, areas from October 10 thru 14. Even radar operators at Wright-Patterson Air Force Base unofficially admitted tracking flying objects they could not explain. Scores of witnesses reported four UFO's being chased by six military jets around 7:30 the evening of October 14.

An Air Force spokesman denied having tracked UFO's on radar or sending aircraft out in pursuit. . . . "What people have been seeing in the sky is not from this base."

Michigan

Ohio Governor John Gilligan and his wife reported seeing a strange amber-colored beam of light hanging in the sky near Flint, Michigan, on the night of October 15. They watched the UFO from their car and kept it in view for thirty-five minutes as it faded in and

out in the southeastern sky. The Governor said it could not have been a reflection of the moon, because it was visible in the northeast at the exact time he and Mrs. Gilligan were watching the UFO. They finally lost sight of the strange light near Ann Arbor.

Louisiana

Sheriff's deputies in Washington Parish, Louisiana, reportedly chased five red-orange objects through a 12-mile stretch of woods on October 15. When one of the deputies turned on his patrol lights, the object appeared to descend and approach the cruiser. Scared, the officer quickly cut the lights off and the flying object zipped away.

Indiana

At dusk on October 15 near Huntington, Indiana, a farmer and his wife were chased by a UFO while she was driving the family car with her husband following in his truck. When they got to their home the UFO hovered over their barn for a short time before flying off at an unbelievable speed.

Thirty-five miles away at Fort Wayne's Baer Field the on-duty radar operator, Neal Rupert, was receiving telephone calls asking about a UFO. He checked his radar scope located in the Federal Aviation Administration air traffic control tower. He saw the object on the screen, but suddenly it started to move at an unbelievable speed. Rupert said in his thirty years in traffic control towers he never saw anything move so fast.

The next day a deputy sheriff and a Huntington City Councilman saw UFO's that were described as extremely bright and larger than anything else in the sky.

Ohio

Ken Chamberlain, an Ohio cameraman with the Columbus Dispatch, snapped a series of night-time shots of UFO's over Columbus on October 17 after police received more than 150 calls from people who reported seeing strange lights in the sky. A few weeks earlier, at eight o clock in the evening, patrolman Rob-

ert Bales of New Lebanon, Ohio, photographed a bright light that he and other local residents watched hovering in the sky for over thirty minutes. At Union, Ohio, UPI reported that a police officer had taken a picture of a red and green object that blinked and hovered in the sky for an estimated five minutes before flying away.

Alabama

On the night of October 17, Jeff B. Greenhaw, 23, the one-man police force of Falkville, Alabama, responded to a call from a woman who claimed a "spaceship" had landed in a field behind her home. When Greenhaw arrived at the field he found nothing out of place but decided to inspect further. As he drove down a side road he was surprised by a figure dressed in a silvery suit, who he assumed to be a prankster. Going along with the gag, he stopped his cruiser and called out to the figure, "Howdy, stranger." The figure said nothing but continued to walk toward the car.

Apprehensive, Greenhaw got back in the cruiser and turned on the police beacon. The figure turned and started running down the road, with Greenhaw in pursuit. In his excitement, the young policeman accelerated too hard, causing the tires to spin on the road's loose gravel, sending it off the road's edge. When the dust cleared and Greenhaw got the car back on the road the creature was gone. Greenhaw said, "It scared me to death."

Tennessee

On October 17, near the border of Alabama and Georgia in the vicinity of Chattanooga, Tennessee, a 30 to 40-feet long, 10-feet wide, cigar-shaped flying object was seen by more than two dozen people, including three police officers.

Sgt. Lester Shell, 47, traffic division supervisor, twenty years with the police department and experienced private pilot, and Patrolman Harry Jarret, 35, a nine-year police veteran, got to within 100 yards of the

hovering UFO which was about 20 feet off the ground. The object glowed a brilliant blue-white so intense that any thought of its being an airplane was instantly dismissed by both officers.

As they closed in on the craft it silently and slowly moved straight up. Five miles away, at 8:30 p.m. another police officer, Bill Kuykendall, 29, also observed a UFO. He watched it move southerly toward the Georgia border; then all of a sudden it shot off faster than anything he had ever seen before. Officer Kuykendall said, "It certainly wasn't the moon or a star nor any airplane."

Texas

The following story is reprinted through the courtesy of the National Enquirer.

Two veteran jet captains repeated in shock and disbelief as a flashing red ball, like nothing they'd ever seen before, shot past their planes with incredible swiftness. Piloting the Eastern jet was Jerry Noyes, 42, of Jacksonville, Florida, an eighteen-year veteran airline captain who said, "It's huge, I don't know what the hell it is." The pilot of the Braniff jet, whose name was not recorded, said, "Oh my God, look at the speed of that thing."

The pilots' startled comments came in a crackling three-way conversation with an air traffic controller watching the encounter on radar in a control tower below. . . . and all three men have agreed that the strange pulsating ball was a UFO.

As traffic controller Jim Stevens put it: "There's absolutely no doubt in my mind that this was a real unidentifed flying object."

The fantastic incident, also witnessed by several other airline personnel, took place as the two pilots were preparing to land at San Antonio International Airport in Texas.

Traffic controller Stevens said he first became aware of the UFO's presence at about 2:30 a.m. on Oc-

tober 23, 1973, when the San Antonio Department of Public Safety phoned to say the department had been flooded with calls about an unusual object in the sky near the airport.

Stevens said, "I scanned the sky, then, just as I was shrugging my shoulders and dismissing the reports as figments of people's imagination, there it was, an eerie, brilliant ball of light.

"A shiver went up my spine as it dawned on me that I was probably looking at an object that had come from outer space. I was glued to my seat. I just couldn't move.

"It would light up and then switch off at irregular intervals as it moved slowly along. Suddenly, it stopped a mile west of the airport at about 1,000 feet. Then it began to climb gradually to the northwest.

"That movement completely ruled out the possiblity of the object being a balloon because the wind that night was blowing eight or nine knots from the northwest. No balloon will travel against the prevailing wind.

"I glanced at our radar screen, it had suddenly begun picking up the object. Four times, at four-second intervals, the radar recorded a blip exactly in the position of the object.

"About this time, two 727 jets came into the area, one Eastern and the other Braniff International. I radioed to the Eastern pilot and he answered, 'I see it, I don't know what the hell it is.' Then the Braniff pilot came on the radio and said he was going to take a look at it."

Jerry Noyes, the Eastern pilot, told the Enquirer, "My crew and I first spotted the object at 3,500 feet, approximately 1,500 feet off our left wing. It was a bright red ball of light, flashing on and off erratically.

"As we passed the object, it suddenly shot up 2,000 feet at an incredible speed. We were amazed. Its vertical speed was much, much faster than that of any airplane.

"By this time the object was between our airplane

and the Braniff jet, which was at a higher altitude. The object then dived vertically to about 3,000 feet below us, at the same incredible speed. Then we lost track of it as we prepared to land.

"I had been in contact with the Braniff pilot, I don't know his name, and he told me over the radio, 'Oh, my God, look at the speed of that thing.' As far as I am concerned the object was a UFO. And I know my crew felt the same way."

Noyes' co-pilot, C.A. Nickerson, 35, of Atlanta said, "It was the speed that amazed us, the incredible vertical speed. I'm still baffled."

Chester Blanchard, the sergeant in charge of airport security that night, said: "I saw it myself. It came down toward earth and hovered at about 2,000 feet, then shot off toward the northwest. I was riveted to the ground by shock."

San Antonio police officer Wayne Davis, 44, talked with both Noyes and the Braniff pilot, who refused to give Davis his name, after the incident.

"You expect pilots to know most things that fly around the sky at night, but they had no idea about this one, they both swore it was a UFO," Davis said.

Air controller Stevens related for The Enquirer what happened after the busy pilots lost sight of the UFO:

"The red lights started flashing on and off very quickly. It looked as if it were going to crash into the ground. But suddenly, the light stopped. Then . . . nothing. The area was in darkness again. The object had vanished. The whole thing is totally baffling. I'd never seen a UFO before, but I'm convinced I've seen one now."

HISTORY OF UFO WAVES

The 1973 UFO wave was no surprise; in fact according to a great many experts, the world-wide flap was long overdue. Since UFO record keeping began in 1947 there had been unexplainable periodic surges of

worldwide activity. An average year of UFO reports number between one hundred to five hundred. But every so many years this planet is hit by a UFO wave, or if you prefer, flap.

The first UFO wave was noted in the years 1896 and 1897. The wave apparently started in the San Francisco area, where the Mayor and many other distinguished citizens were among the witnesses. Mysterious "Airships" were next reported over the Midwestern states and then from every corner of the nation producing headlines from coast to coast.

UFO Named Flying Saucer

Officially the first recorded major wave of UFO sightings in the United States happened in June, 1947. It was also the year the term "flying saucer" was coined. It began on June 24 when Kenneth Arnold, a private pilot flying near Mt. Ranier, Washington, observed nine flat, shiny objects fluttering and skipping along as if on a chain. He reported to the press that the strange objects flew "like a saucer skipped across water." Newsmen promptly dubbed the objects "flying saucers," and the name is still with us.

During the following three weeks, similar unidentified objects were reported flying over twenty-five states with thirty percent coming from the state of Washington alone.

1952 Wave

From 1947 through the 1952 wave there were only about six hundred UFO sighting reports made to the Air Force. Ufology finally came into its own when the 1952 wave produced visual sightings verified by radar. For the first time their outstanding speed, maneuverability and persistence demonstrated their superiority. According to official Air Force figures over fifteen hundred sightings were reported through military channels during this wave. Project Blue Book Chief Captain Edward J. Ruppelt stated that as of July 21, "We were getting an average of forty sightings reports

a day," a third of which still remain in the unidentified class.

1957 Wave

When the Soviet Union launched their first earth satellite, October 4, 1957, Americans suddenly became space- and sky-conscious. Amateur astronomers and average citizens strained for a glimpse of the barely visible Russian sphere. In spite of the unusual sky-watching activity the entire month of October, 1957, gave us very few UFO sighting reports. A month later, a few days before the launching of Russia's dog-carrying Sputnik II space shot, an unusual number of UFO sighting reports were received by the U.S. Air Force. Immediately following the launching on the evening of November 2, 1957, every country of the world was suddenly deluged with UFO sightings.

Most of the significant reports concerned very large, usually elliptical objects, observed on or near the ground (not merely fleeting lights in the sky). Reliable witnesses described plainly observed UFO's, and the press gave their stories full coverage. The features of the UFO reports which defied explanation were the consistent descriptions of red to reddish-orange, egg-shaped (roughly elliptical) objects on or near the ground, and electrical failures experienced in their vicinity.

By November 3, newspapers were full of sightings; by November 5, the reports were given banner headlines; the Air Force issued a special press release to the effect that no evidence of UFO's had been found and all except two percent of the reports had been explained. As the UFO observations began to taper off around November 15, over four hundred sightings had been reported to the Air Force for the three week period. The entire year of 1957 checked out with more than twelve hundred sightings being reported.

Collectively, the reports were too widespread and consistent to be ignored. At least a hundred sightings

have never been adequately explained in conventional terms and apparently never will be.

OUTCRY FOR ACTION

A massive new UFO wave of sightings began in the latter part of 1964. In late December, UFO's were being reported over the southern portions of the United States and spreading northward up the Mississippi and Ohio Valleys. By March 1966, the UFO subject was a national sensation and there was a public outcry for action.

Condon Committee

The U.S. Air Force found itself faced with a problem that had to be done away with once and for all, and quickly. A contract was made with the University of Colorado to set up a special UFO study project. The half million dollar study was to take two years and to be conducted by a team of non-government scientists under the direction of Dr. Edward U. Condon, 66, professor of physics at the University of Colorado, former Chairman of the National Academy of Science, and former chief of the U.S. National Bureau of Standards. One fact not made public at that time was that the team of scientists, a dozen astronomers, physicists, psychologists, and others were to be chosen from the ranks of non-believers in UFO's.

Earlier in 1965, Dr. J. Allen Hynek, head of the Astronomy Department at Northwestern University and for twenty years chief scientific consultant on UFO's to the Air Force's UFO investigating projects, came up with a plan for a computer study program of the entire world-wide UFO situation. Needless to say, the Air Force did not want to prove that UFO's existed so the proposal was rejected in favor of the supposedly unbiased Condon study.

Professor Condon did not go into the UFO investigation with an open mind. That statement can be easily proved by examining a few of his quotes: "The one thing I don't expect to prove is that UFO's don't exist

because it is impossible to prove a negative proposition." "I do think, however, that ninety percent of these sightings can be explained as balloons, searchlights on clouds, or some other known phenomena, natural or man-made." "I won't believe in outer-space saucers until I see one, touch one, get inside one, haul it into a laboratory and get some competent people to go over it with me."

The period 1965 through 1967 produced more than three thousand reported UFO sightings, far more than any other consecutive three-year interval in history.

In the middle of all this furor, a 1966 Gallup Poll disclosed over five million Americans stated they personally had seen UFO's; however, for the 18 years 1947 to 1965 only about 10,000 sightings had been reported to the Air Force's Project Blue Book. Almost 5,000,000 sightings ended up in the observer's private dead file.

During 1967 the Condon committee traveled the nation, interviewing UFO witnesses and supposedly investigating the situation. In January, 1968, the whole project fell apart and the investigators divided themselves into believers and non-believers. Members were fired from the committee while others resigned in protest. Professor Hynek and Dr. James E. McDonald, a University of Arizona senior physicist, both attacked the project. McDonald said, "My position is that UFO's are entirely real with the strong possibility that we are under surveillance by an extraterrestrial intelligence."

In 1969, the "Colorado fiasco," a 350,000-word, 900 page "Condon Report," was published and it concluded that there was no evidence to support the notion that UFO's were extraterrestrial visitors, and that future UFO studies would be a waste of time and money and would not yield any useful information.

Scientific Backlash

Six prominent leading scientists expressed strong disagreement with the Condon Report.

(Dr. J. Allen Hynek), director of the Lindheimer Astronomical Research Center at Northwestern University:

". . . .an incomplete, neglectful, and short-sighted report."

"Condon beautifully neglects some of the investigations of his own people. The report is a beautiful case for further scientific study."

". . . .UFO's do exist, are observation craft from other inhabited worlds."

"In the long run, UFO research will be conducted, but not until the negative impact of the Condon report is overcome."

(Dr. James E. McDonald), senior physicist at the University of Arizona's Institute of Atmospheric Physics:

". . . .(McDonald) investigated specific cases of UFO sightings which were pooh-poohed in the Condon report and have found them valid, in spite of Condon."

The study of UFO's is an unwanted Air Force function, "an albatross about their necks," and ranking Air Force officials seem to "prefer that the problem simply go away. It won't go away whether studies are shelved or not."

". . . .the Condon report has had quite a deadening influence. It sets the problem back and has led people in Washington to believe they can forget about the UFO's."

Condon's "brand" of scientific inquiry is "run of the mill science." Condon's "scientific argument is simply inadequate."

"If there is one overriding weakness in the Condon report it is poor scientific argumentation. He investigated only 90 cases of sightings and omitted some of these, many of them which were significant."

The Condon report "was a waste of time and money."

"The almost unbelievable shortcomings of the Condon Report have to be exposed."

"They (UFO's) aren't swamp gas. They are obser-

vations of unknown machine-like devices. We want to know what they are. We don't know now."

(Dr. David R. Saunders), professor of psychology at the University of Colorado and former investigator who was fired from the Condon investigative project:

"We (the Condon investigators) were doing a little better job than the report seems to indicate." But "many cases we looked at didn't appear in the report, even by mention."

(Dr. R. Leo Sprinkle), associate professor of psychology at the University of Wyoming.

The Condon Report is inadequate in that the group took only two years "to study a twenty-year old problem."

The earth is being "surveyed by spacecraft," and that from a scientific standpoint, "we can't neglect any area of investigation."

(Dr. Frank B. Salisbury), exo-biologist and head of the plant science department at the University of Utah:

"It is clear to everybody that the probability of other life in the universe is high, simply because there are so many universes."

". . . .excellent evidence of life on Mars," with the possiblity evidenced by seasonal changes.

(Dr. James A. Harder), associate professor of civil engineering at the University of California:

"I don't know if the CIA (Central Intelligence Agency) has had a hand in debunking UFO's, but I know they (UFO s) have been debunked."

AIR FORCE COVER-UP

On the strength of the Condon report the United States Air Force permanently shut down its twenty-year UFO projects in December 1969. But just exactly how effective were the investigations in the first place? Let's

go back to the beginning, July, 1947, when the Department of the Air Force was officially charged with the responsibility of investigating unidentified aerial objects to determine if they posed a latent threat to our national security. By September the chief of the Air Technical Intelligence Center (ATIC) sent a communique to the Air Force Commanding General stating the conclusion of ATIC that UFO's were real and urging the establishment of a permanent project to analyze future reports.

Project Sign

Project "Sign" (popular name "Saucer") was established on January 22, 1948, with headquarters at Wright-Patterson Air Force Base, Ohio. Their job, to investigate UFO reports. In September a Top Secret "Estimate of the Situation" report went from ATIC to the Air Force Chief of Staff, General Hoyt S. Vandenberg. The report stated that it was concluded that UFO's were interplanetary. The report was kicked back for additional proof and later declassified and burned. It is interesting to note that in 1948 when General Vandenberg was head of the Central Intelligence Group, he ordered the ATIC to take a negative approach to the UFO problem.

Project Grudge

Because of internal disagreement about the significance of UFO's, on February 11, 1949, "Project Sign" became "Project Grudge." Reports were then "evaluated on the premise that UFO's could not exist." By December the project committee released a press statement that all reports of UFO's to date were nothing more than delusions, hysteria, hoaxes, and crackpot reports. An announcement was made that "Project Grudge" was being disbanded; however, the threat was never carried out.

Project Blue Book

It was a time when everyone was living in the "Dark Ages" of UFO investigation. They were still

being observed, but where to report? On September 15, 1951, due to public protest including a group of angry industrialists and scientists, the Air Force was given orders to set up still another project. By October 27, 1951, the new "Project Grudge" was underway, headed by Captain Edward J. Ruppelt. In March, 1952, the code name was changed to "Project Blue Book" and was considered to be a full-fledged organization known as the "Aerial Phenomena Group."

The Central Intelligence Agency got into the investigation on January 12, 1953, to determine whether any of the objects were originating from earth-based foreign countries. The CIA dropped out after it decided they were not.

Until December, 1969, when "Project Blue Book" was shut down, it was the only government center to which all UFO reports were ultimately sent. The investigators managed to make some on-the-spot investigations and put out fourteen annual reports. But how effective could the project really have been? The entire staff was made up of two officers and one non-commissioned officer - Major Hector Quintanilla, Jr., 1st Lt. William F. Marley, Jr., and Staff Sgt. Harold T. Jones plus a regular secretary, Mrs. Marilyn Stancombe, and a part-time secretary. It is quite clear that the Air Force investigating body didn't have enough people to properly investigte even a simple purse snatching never mind the world wide UFO situation.

Air Force Investigation Shelved

Air Force Secretary Robert C. Seamans, Jr., when announcing the termination of Project Blue Book said that no UFO has ever given any indication of a threat to our national security, no UFO appears to represent a technological development or principle beyond the range of present day scientific knowledge, no evidence indicates that UFO's are extraterrestrial vehicles. He ended his statement with, "It would be a waste of both money and time to continue the investigation."

For the next few years it seemed the Air Force fi-

nally did the job—world-wide UFO sighting reports were very rare. Many people believed that the Air Force was telling the truth when they said UFO's existed in the minds of the viewers. From June, 1970, to June 29, 1971, the Russians had launched four Soyuz space vehicles; the United States launched Apollos XIII thru XVI between April 13, 1970, and April 16, 1972. Just about everybody was paying extra attention to the skies, but still there were very few UFO reports.

On December 27, 1972, without warning or fanfare another UFO wave was on us that broke all sighting records. It is now estimated that well over five thousand UFO sightings were reported in 1973 to local and state authorities throughout the nation. Do not lose sight of the fact that these figures only represent a small fraction of the actual number of observations.

During a recent Gallup Poll, eleven percent of the adult population, more than fifteen million Americans, said they had personally observed an unidentified flying object. In addition, fifty-one percent of all persons interviewed believed UFO's are real and not just figments of the observer's imagination or simple cases of hallucination. Forty-six percent of those interviewed presumed the beings come from another planet, look very much like earth human beings and through interbreeding could not be detected. I will develop this premise in greater detail in a forthcoming chapter.

Researchers, believers, and skeptics alike, watch every UFO cycle hoping to get a clue as to what causes the waves. One theory offered by some of the skeptics is they are the result of the power of suggestion through increased mass media UFO publicity. Historically the exact opposite is true because usually prior to past waves, wire services and a large majority of the major news media had ignored UFO stories. The only exceptions were occasional local newspaper stories or radio and TV "talk shows."

Another theory, and the one I favor, is that UFO waves are the result of natural changes in the positions of planets in star systems within our galaxy. When their

home planet orbits closest to earth, extraterrestrial replacement scientists are sent to earth to relieve other personnel. During a relatively short period, while the change-over is in progress there are at least double the number of alien craft flying about the earth. This theory would most certainly account for UFO waves. Once the relieved scientists depart for their home planet, the wave ends until next time.

Even though the United States Air Force has been constantly throwing blocks in the way of UFO investigators, a tremendous amount of factual information has been obtained. We know what their different craft look like—size, shape, and capabilites. We have discovered that the beings operating the space ships are apparently humanoid. It is quite obvious that they want very little to do with us other than for experimental purposes. There is no doubt they are not from this planet and are hundreds of thousands, maybe even millions of years ahead of us in technology.

Dr. Bruce A. Rodgers, member of the Board of Governors of NICAP, engineer, physicist, metallurgist, and prior to his retirement in 1960, professor of Mechanical Engineering at Texas A & M, expressed it this way: "To an engineer, the flight characteristics of the UFO's are matters of great interest. Although what might be called 'engineering data' is not available on these craft, reliable observers have provided information of their performance in our atmosphere. From the reports of these observers, one realizes that what these objects are able to do is truly remarkable by comparison with earth made craft.

"Radar sightings at Goose Bay, Labrador showed an object moving 9,000 miles an hour at 60,000 feet altitude. Our nearest approach to such a speed is 4,000 miles per hour made by the American experimental X-15.

"During its short flight, made at 100,000 feet altitude, the X-15 underwent a considerable rise in temperature. The hottest spots reached about 1,400 degrees Fahrenheit—the low red heat range. Had it continued

on in level flight at 4,100 mph, its structure undoubtedly would have undergone considerable distortion if not actual failure. If the X-15 had been able to attain a speed of 4,100 mph in level flight at an altitude of 2,000 feet or 3,000 feet, atmospheric friction might well have produced a temperature of 2,500 degrees Fahrenheit, possibly higher. Members that did not melt would have had so little strength as to be completely useless.

"Most observers have no equipment for measuring UFO speeds and have simply commented that the object they saw traveled at very high speed. However, Captain Nash, pilot of a DC-4, and his co-pilot saw a group of six circular UFO's under conditions that made it possible for them to make a reasonable estimate of their speed which they estimated to be 12,000 mph or more and of their altitude which the pilots estimated to be 2,000 feet above the ground.

"Quite as astonishing as the speed of Captain Nash's disks was their ability to reverse their direction of travel very quickly. They slowed from 12,000 mph to a complete stop, started off in the direction from which they came, accelerating to about 12,000 mph again and did so in a time conveniently estimated in seconds.

"The ability of UFO's to change direction almost instantly has been observed by a number of people. Major Cox, living on his New England farm at the time of the incident, noticed a UFO about 30 feet in diameter flying a few hundred feet above ground. Suddenly the craft stopped and started off at about a right angle to its previous course.

"What maneuvers like those seen by Captain Nash and Major Cox must mean is that these visitors from outer space do not depend upon the atmosphere for the execution of their changes of direction as ordinary aircraft do. Rather, they appear to operate quite independently of the atmosphere and are not affected by it.

"The ability of a UFO to travel at high speed without being heated by atmospheric friction and to turn square corners is remarkable. There are other in-

teresting facts about these craft, too, as a bit of calculation will bring out.

"One thing that calculation shows is that the power required to execute a maneuver such as Captain Nash and his co-pilot saw is amazing, at least it is on the basis of our technology. Even if the disks weighed only a few tons, the rapid acceleration these men observed would require several million horsepower even when air friction is ignored. To put a plant of such power in a disk 100 feet in diameter—the size Captain Nash estimated the disks to be—would be quite impossible, and where would one store fuel for the long journeys these vehicles undoubtedly make? Not even a nuclear plant of our type could be fitted in.

"Another point of interest is that the accelerations observed are much higher than human beings can survive. And that fact brings up the question as to what kind of beings make up the crews of these space ships. Or do they not have crews but are remotely controlled from mother ships?

"There is much that is mystifying about UFO's and woefully little information about them. But, there is one thing about them about which there can be no doubt. Whoever builds and operates these vehicles possesses a technology beyond anything known on our planet."

In the following chapters I hope to prove, using scientific data, that all of us—you and I, black, yellow, white, every Homo sapiens sapiens—are a combination of earth and outer space beings. Through inter-breeding man's evolutionary time table was deliberately interrupted and pushed ahead for experimental purposes. My job as a reporter is to factually interpret the work of scientists and other experts and present the information in non-technical terms. I hope to prove the theory held by many that this planet and its inhabitants are undergoing a gigantic galactic experiment.

2

Where Did We Aliens Originate?

GALACTIC EXPERIMENT—PHASE I

The seemingly simple question—where did we aliens originate?—turned out to have a very complicated answer. Scientists and theologians have three basic lines of thought on the subject, yet in one form or another there are more than 30 different evolutionary theories. Basically the conflict is between those who believe in God and those who do not.

The creationist's view is that all life throughout the universe came into being by God's action while the atheist holds it came into existence simply by chance.

Organic Evolution

Hard core evolutionists strongly believe that through "organic evolution" all living things, animals and plants alike, are related through a common ancestry which originated from the single-cell amoeba. This first life source formed by a natural chemical action some three billion, five hundred million years ago.

In light of modern scientific knowledge, the theory of organic evolution is very weak because it consists of little more than opinions mixed with erroneous information. The facts are, no provable chain of life

forms have ever been discovered leading from the single-celled amoeba to any plant or animal. Researchers have been unsuccessful in their attempts to trace the history of a single group of modern plants from their beginning, not to mention the complex history of the evolutionary development of man.

The proverbial missing link is more like a lot of links lying around looking for a chain with the necessary connectors, nowhere to be found. The entire theory is composed mainly of gaps loosely woven by broken sequences. Most scientists are aware that new species of life and nearly all new categories suddenly appear without any lead-up by known gradual evolution. Instead of the theory of evolution being represented as branches of one gigantic interrelated family tree of life, it is more like a whole independent forest.

Divine Evolution

Another evolutionary theory, and the one I favor, is that through special creation each species or organism was originally created independently by God. Through the process of evolution, at a specific, proper moment in time, every basic life-form was specially created.

All living things are extremely different in form, yet they are remarkably the same within any given species. Goats have always been goats and pine trees remain pine trees generation after generation. All modern breeds of dogs can be traced back to a single species of wild dog; horses came from one or two species of wild pony and many breeds of cattle evolved from one or a few wild ancestors.

Changes to certain life forms do occur but they never produce new structures such as feathers or horns. Mutations like color, length, and shape have been noted but extra legs, wings, or other structural changes have never been observed. To the best of my knowledge, not one scientist has come forward with fish eggs about to hatch into amphibians; a reptile growing even one feather; an ape or monkey that gave birth to a

primitive-type man. If creatures can change from one kind into another, why don't we still see new life forms developing?

Apparently there is an unwritten limit on the capability of an animal or plant to change into something else, regardless of how much time is involved.

Theistic Evolution

The only remaining popular theory, which is a combination of the previous two, is "theistic evolution." This group of evolutionists believe in God as the Creator of the universe but He is credited with producing only the single-celled amoeba. They say this was God's method for development of the different forms of life and it is not wrong to believe in a Creator and organic evolution at the same time.

The father of the theistic evolutionary theory, Charles Darwin, fell into this category because he accepted both a Creator and organic evolution. He stated that God was the originator of life and expressed the theory that evolution was the method whereby He created all life; that man and the man-like apes are simple offspring of a common ancestor, starting with the amoeba. Darwin believed changes in life-forms were unlimited.

How can people who profess a belief in a Creator think that all life-forms began with a single-celled creature? Were they then abandoned to develop by self-evolution? Was God incapable or unwilling to produce other more complex life-forms?

As more scientists take the approach of "question, research, evaluation," enormous flaws in the organic evolutionary view become apparent. The modern-day creationists and evolutionists both ponder the question of why we are here. Theories abound, conjecture is abundant, but proof is wanting.

ADAM AND EVE

No discussion about evolution would be complete without some mention of the Biblical story of Adam and Eve which is supported by Christian, Jewish, and

Moslem religions. The only way to analyze the subject is by reviewing the Old Testament, specifically a very small section of Genesis.

The Book of Genesis was written over 3,000 years ago and is one of several Books of the Old Testament containing the history starting when God "created the heavens and the earth" (Genesis 1:1). Genesis is named for the word GENERATION; the Hebrews call it BERESHITH, from the Word with which it begins.

According to the Bible, God designed plant and animal life on earth and the work of creation was distributed over six days and on the sixth day MANKIND was created. "Then God said, 'Let us make man in our image, after our likeness; and let THEM have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth'" (verse 26). ". . .God created man to his own image, the image of God He created him; MALE and FEMALE He created THEM" (verse 27).

I spoke to men of God who had different religious points of view and heard a variety of theories about the Biblical account of Adam and Eve. The majority of younger churchmen seemed to agree that many Adams and Eves were created by God at about the same time. They believe that the story of creation was written, in parable form with just two characters, so that the people of the time could more easily understand the complicated message.

The latest scientific information totally eliminates any possiblity that the world was created in just six days. The term "six days" is now thought to be a period of unspecified time which could have represented millions or even billions of years; there is no way of knowing.

The Bible is a unique Book that claims to be revelation from God to all mankind. A mistake that is often

made is trying to make it a science textbook or the Scriptures scientific works.

God, Man and the Universe

While I was on tour with my first book, Limbo of the Lost, in Albany, New York, a gentleman gave me a copy of the Book of Mormon containing the Doctrine, Convenants and several Books including the Pearl of Great Price and the Book of Moses.

I learned that two large religious groups in the United States, The Church of Jesus Christ of Latter Day Saints and the Reorganized Church of Jesus Christ of Latter Day Saints, both accept these works as well as the Bible as the Word of God.

Just what the Mormon's Books have to say about life on other planets is clearly shown by the following passages of the Book of Moses, chapter 1, verses 31 to 40:

> And behold, the glory of the Lord was upon Moses, so that Moses stood in the presence of God, and talked with Him face to face. And the Lord God said unto Moses. For mine own purpose have I made these things. Here is wisdom and it remaineth in Me.
>
> And worlds without number have I created; and I also created them for mine own purpose; and by the Son I created them, which is mine Only Begotten.
>
> But only an account of this earth, and the inhabitants thereof, give I unto you. For behold, there are many worlds that have passed away by the word of my power. And there are many that now stand, and innumerable are they unto man, but all things are numbered unto me, for they are mine and I know them.
>
> And as one earth shall pass away, and the heavens thereof even so shall another come, and there is no end to my works, neither to my words.

> And now, Moses, my son, I will speak unto thee concerning this earth upon which thou standest, and thou shalt write the things which I shall speak.

LIFE ON OTHER PLANETS

Not long ago most scientists considered the possiblity of life being anywhere else other than on this planet as science fiction simply to be dismissed. You don't find that kind of thinking any more. Today's scientific evidence has forced them to admit that they are now willing to consider the existence of extraterrestrial life.

The change in attitude came about when, with every tool known to twentieth century science, not a single, unknown substance could be found anywhere in the universe. Analysis of meteorites that had slammed into our planet over the centuries or the hundreds of pounds of materials brought back from the moon by our astronauts disclosed nothing we didn't already have on earth and plenty of it.

All chemical elements and molecules in interstellar gases broadcast their whereabouts with identifiable radio waves. As early as 1968 the University of California's 20-feet radio telescope discovered the radio signals of water and ammonia in interstellar space; two elements vital to life. Other radio telescopes detected the existence of hydrogen, carbon monoxide, cyanide, formaldehyde, and 25 other molecules, more than enough basic building blocks to substantiate the existence of life elsewhere.

Exobiologists and others scientists admit that there are many unanswered questions but the most intriguing: how intelligent is the extraterrestrial life? The universe was created billions of years before the Milky Way, a strong indication that other intelligent life began on numerous planets having similar chemical mixtures as earth, billions of years ago. These earlier humans

naturally would have evolved and eventually reached the civilization stage and their space age.

Only five-billion years ago, our galaxy and solar system were forming, followed a half-a-billion years later by earth. The first earth-life in the form of micro-organisms was created only 3,500-million years ago; before that time this spinning planet was not suitable for any form of life. Scientists do however, agree that when microscopic life happened, it happened very fast, perhaps in less than a few hundred-million years.

By use of the electronic microscope the oldest fossils, the first evidence of life, are a few shadowy shapes believed to be single-cell organisms discovered in South Africa (approximately 3,500 million years old); Minnesota and Rhodesia (2,700 million years old); the oldest known evidence of simple microscopic plants were found in South Africa (2,500 million years old); fossils found in North-central United States and several different organism forms, most unknown, were discovered in Canada (2 billion years old); Australia and Michigan, highly developed clusters of cells (1 billion years old).

How to Date Fossils

How do scientists go about pinning down the age of a fossil found buried in a geological strait? Accuracy is a constant problem when it comes to dating ancient objects and requires knowledge, skill, and wisdom of trained observers from several scientific fields, aided by modern measuring devices and techniques. From scattered bits of evidence, scientists try to reconstruct the story of the past. Unfortunately most of the answers come from deduction and theory which naturally is open to dispute or revision, not only from religious leaders but within the scientific community itself. Over the past few years great strides have been made in accurate dating systems giving scientists the much needed data to help them in their attempt to better understand where we came from and when.

To be able to fully grasp this chapter it is of the

utmost importance to have a basic understanding of the available dating procedures and sciences needed to unravel the mysteries of the ages.

Dating Techniques

(Radio Carbon–14 dating): A technique based on the fact that every living thing, plant, or animal absorbs radioactivity throughout its life, and at death starts to lose it at a constant, measurable rate. The amount of carbon-14 retained in fossils or other organic material at any later time can be measured by a Geiger-Muller counter. The limit of the radio carbon clock is no more than forty-thousand years because after that time very little carbon-14 remains in fossils.

(Potassium-Argon (K/A) dating): This procedure is based on the fact that natural potassium contains a small amount of a radioactive material and when it decays it produces a certain amount of gas called argon. This decaying process is at a fixed time-rate that can be measured. It is an extremely reliable method because of its consistent results. Measurements after ten million years have to be corroborated using other sciences and methods.

(Amino Acid dating): An improved technique developed in 1971 for dating bones and other fossil remains by measuring the crystallization of amino acid. The new procedure accurately measures objects from a few years old to several million years. The clock is a process known as racemization and indicates live objects with rotating light waves to the left; dead objects cause the rotating light waves to move to the right. Amino acid dating requires very little of the material to be measured, with the results available within a few hours.

(Rubidium-strontium dating): Based on the belief that the age of rocks and minerals can be measured by how much Rubidium 87 decays to strontium 87.

(Uranium and Thorium-lead datings): Three methods are used to age minerals found in granites and other such rocks by the amount of decay of: thorium

232 to lead 208; uranium 235 to lead 207; uranium 238 to lead 206.

There are many unusual dating procedures available to science—too many to be mentioned here.

Related Sciences

(Anthropology): A social science that studies the human prehistoric and historic behavior of the races of man through his physical, cultural, and mental characteristics.

(Geology): The science dealing with the structure and developmental history of the earth's crust and the formation of the different layers. It includes the study of individual rock types, minerals, and early forms of life found as fossils in rocks.

(Archeology): The science devoted to the systematic study of ancient life and culture through the material remains, relics, or artifacts left behind. The archeologist excavates and investigates objects found on the site of ancient settlements drawing conclusions as to their nature and behavior.

First Known Writing

Until recently, it was believed that written information only began about seven thousand years ago. However, anthropologists changed their way of thinking when an ancient bone excavated in France showed drawings on it in the form of complex imagery that could be some form of record-keeping. The fossil find was carbon-14 dated as being 135,000 years old. Anthropologists agree that the latest discovery proves that early man had the ability to record his thoughts, and hopes are running high that future finds will open some of the doors to the past.

TRAVEL BACK THROUGH TIME

Let us plot a course through the billions of years of geological time in an attempt to grasp Earth's evolutionary development and try to pinpoint where

the first phase of a possible galactic experiment began. Imagine a log kept by scientists from a more advanced world that had earlier undergone a similar evolutionary development. Because of the tremendous time factor, this imaginary log had to be charted at a rate of a hundred and fifty years of Earth's history for every second of time or 12,960,000 years for every twenty-four hour day.

I never intended that this book become a religious work but the similarity between actual events and statements made in the Bible appear to be more than just mere coincidence. As a matter of interest, I have included applicable verses from Genesis at various points throughout the "Earth Log." Also where needed, for clarity, the editors have added an update note (EN).

Earth Log

(January 1) . . .4,730,400,000 years ago. . . The formation and development of earth are recorded. The planet is being swept by debris from interplanetary space which is melting over the entire surface. Very high volcanic activity is everywhere. The planet is very barren,—no clouds, no atmosphere, and no water. Earth at this time is not suitable for life of any kind.

> Genesis 1:1-2. (first day) In the beginning God created heaven, and earth. The earth was void and empty, and darkness was upon the face of the deep.

(February 2) . . . 427,680,000 years since creation of Earth . . . Bombardment by interplanetary debris and lava flow have subsided, formation of the Earth's crust has begun. Development of atmosphere and hydrosphere is underway as incidated by the build-up of hydrogen gas. Water vapor is condensing, storm clouds have gathered and torrential rain storms are cooling molten lava and other surface areas. Formation of the primordial sea is in progress. Still no sign of life.

Genesis 1:3-4. (first day) and God said: Be light made. God saw the light that it was good; and he divided the light from the darkness.

(March 2) . . . 3,939,840,000 years ago . . . 790,560,000 years since earth was created. Earth has cooled; soon conditions for life will be right. It is just a matter of time before this planet will be teeming with various forms of life. Also a new planet is forming about 239,000 miles away. Apparently this moon is an earth satellite in orbit, traveling at about 2300 miles an hour. At present the moon is undergoing tremendous meteoritic bombardment. Certainly no life there.

Gensis 1:9-10. (third day) God also said: Let the waters that are under the heaven, be gathered together into one place: and let the dry land appear. And God called the dry land Earth; and the gathering together of the waters, He called Seas.

(March 30) ... 3,576,960,000 years ago ... 1,153,320,000 years since Earth was created. Proteins, various amino and nucleic acids, essential materials of life are forming in warm rock pools near the slopes of volcanoes. No other signs of life.

(April 27) ... 3,214,080,000 years ago ... 1,516,320,000 years since Earth was created. First life in the form of single cell algae and bacteria is developing in water, on beaches, and other wet, warm areas.

(EN) - These organisms evolved into seaweeds, pond scum, etc.

Gensis 1:11 (third day) And He said: Let the earth bring forth the green herb, and such as may seed, and the fruit tree yielding fruit after its kind, which may have seed in itself upon the earth.

(November 11) ... 648,000,000 years ago ... 4,082,400,000 years since Earth was created. During the past two and a half billion years very few significant developments have taken place. Finally the first invertebrates (lower animal forms without backbones or spinal columns) have come into existence.

(EN) - Over 900,000 species have developed, including sponges, jellyfish, worms, oysters, squid, starfish, shellfish, and various other marine life.

(November 22) ... 505,440,000 years ago ... 4,224,960,000 years since Earth was created. Aquatic vertebrate animals (with backbones), fish, have appeared.

(EN) - Many thousands of species of fish developed, but only about fifty-thousand survived and live throughout almost all of the waters of the world.

(November 25) ... 466,560,000 years ago ... 4,263,840,000 years since Earth was created. Land plants, one of the two divisions into which all living things belong, are beginning to appear in abundance. It is essential that this growth be great and rapid, for the other form of life, animal, will need plants, directly or indirectly, for food.

(November 26) ... 453,600,000 years ago ... 4, 276,800,00 years since Earth was created. Amphibians that live on land and lay their eggs in water have made their appearance. These animals with backbones begin their lives with gills, living entirely in water. As they mature, the gills change to lungs and they become air-breathing creatures.

(EN) - Approximately 2500 species, like frogs, salamanders, and toads exist mostly in

warm and moist climates. The amphibians that live in colder climates hibernate throughout the cold winter months.

(November 30) ... 401,760,000 years ago ... 4,328,640,000 years since Earth was created. The most highly developed class of invertebrate animals, insects, have arisen.

(EN) - Of the known million or more species of animals, over three quarters or at least 800,000 are insects. Almost daily, new species are being detected; therefore, it is estimated that there are more than two million different kinds ranging in size from 1/100 of an inch to almost twelve inches. Considered to be the most successful of all the invertebrate animals, insects can be found everywhere, on land, in fresh water, salt water, salt lakes, hot springs, even in the Arctic, however, they reach their greatest number in the hot, damp tropical climates.

(December 5) ... 336,960,000 years ago ... 4,393,440,000 years since Earth was created. First reptiles, airbreathing, backboned animals, covered with scales or shells have come into existence.

(EN) - These creatures could not adapt to the changing condition of Earth. The majority of reptilian species have become extinct and the evidence points to the fact that eventually the class will be no more. Reptiles are cold-blooded and have to depend upon the environment for warmth; that's why 2500 species of snakes and lizards, almost 250 varieties of turtles, and 21 species of crocodilians live in temperate and tropical regions.

(December 12) ... 246,240,000 years ago ... 4,484,160,000 years since Earth was created. Age of the Dinosaur begins as large reptiles dominate all other

land animals. These animals range in size from nearly two feet in length to a gigantic eighty feet or from a couple of pounds to nearly fifty tons. Most dinosaurs are vegetarians, but a few species are meat eaters.

(December 15) ... 207,360,000 years ago ... 4,523,040,000 years since Earth was created. The first birds, warm-blooded vertebrated animals with feathers and highly specialized for flying, make their appearance. Of all of God's creatures the bird is the most useful, most ornamental, and most widely distributed.

(EN) - Birds are very successful, living on the seas, land, in cages, tropics, deserts, and polar regions. Some people believe an absurd story about birds evolving from reptiles, that the earliest type of primitive birds were really flying dinosaurs which throughout the centuries developed feathers.

The major flaw in that theory is that following the appearance of the first birds, the next forty-five million years in the bird's evolutionary process are lost. At present there are about twenty-five thousand known varieties of living birds, ranging from the most primitive runners like the ostrich to the most highly evolved perching birds.

Genesis 1:20-24. (fifth day) God also said: Let the waters bring forth the creeping creatures having life, and the fowl that may fly over the earth under the firmament of heaven. And God created the great whales, and every living and moving creature, which the water brought forth, according to their kinds and every winged fowl according to its kind. And He blessed them, saying: Increase and multiply, and fill the waters of the sea: and let the birds be multiplied upon the earth. Let the earth bring forth the living creatures in its kind, cattle and creeping things, and the beasts of the earth, according to their kinds.

(December 18) ... 168,480,000 years ago ... 4,561,920,000 years since Earth was created. Mammals, the first of the warm-blooded, highest class of vertebrates are now in existence. These creatures are different from all other life forms; instead of development of a defensive armor, they specialize in a complex nervous system. Their relatively large brain gives them an advantage in the struggle for existence. Also they have a constant body temperature which enables them to withstand both cold and heat; therefore mammals can adapt to almost any section of this planet. Unlike other creatures, mammals nourish their young with milk.

> (EN) - Twenty-five thousand species of mammals came into existence; only fifteen thousand species now live. Mammals have various methods for moving about. A few examples are: running and walking—dogs, horses, giraffes, elephants; jumping—kangaroos, rabbits; burrowing—rats, moles; swimming—whales, porpoises; climbing—monkeys, squirrels; gliding and flying—bats.

December 19) ... 155,520,000 years ago ... 4,574,880,000 years since Earth was created. The dinosaur's seventy-million-year stay on earth has come to a close. The chain ends with no descendants.

> (EN) - Nobody really knows why the giant reptiles did not survive; no one factor can be blamed. A good guess is a combination of conditions, including geologic and climatic changes and the inability of such a highly specialized animal to adapt to the colder new environment.

(December 23) ... 103,680,000 years ago ... 4,626,720,000 years since Earth was created. The highest order of life to develop so far in the animal kingdom is a different type of mammal, "primates" that live in trees. Prior to this creature all mammals gave birth to their young through an egg-laying process. Primates are

born alive through a structure called the "placenta" and are cared for by the mother until the offspring are strong and wise enough to take care of themselves.

> (EN) - The Prosimians, earliest primates, eventually developed into apes, monkeys, tree shrews, and lemurs (a strange species neither monkey nor ape).

(December 28) ... 38,880,000 years ago ... 4,691,520,000 years since Earth was created. During the past fifty-five million years most of life-forms, including new plants and animals, have been created, developing very quickly. Explosive creation of flowering plants, the development of sharks, octopuses, crabs, lobsters, sea urchins, horses, rhinoceroses, camels, beasts of prey, horned cattle, cloven-hoofed animals, and lignite swamps and forests. Still no sign of the first member of the human family.

(December 30) ... 12,978,000 years ago ... 4,717,422,000 years since Earth was created. At two minutes before midnight the first man-like creature, "Ramapithecus," suddenly came into existence. This probable human is less than four feet tall and has a small 500 c.c. brain.

> (EN) - Fossil remains of a few teeth and jaw fragments have been discovered in China, Kenya, northern India, south Germany, Hungary, and Greece. Many scientists readily admit they do not know whether this creature was an ape with man-like traits or man or for that matter whether he walked erect (upright).

(December 31) ... 4,860,000 years ago ... 4,725,540,000 years since Earth was created. Nine hours before the end of the year three members of the first definite human family, "Australopithecus" (Southern Ape), with a brain case a little larger than that of a gorilla, 600 c.c. evolved.

(EN) - Two of the three varieties became extinct within the next four million years. They were Australopithecus Boisei found in East Africa (oldest fossil 37 million years old) and Australopithecus Robustus, found in South Africa (oldest fossil approximately two-million years old). Australopithecus Africanus, found in both East and South Africa, carried on to evolve into the next phase of man. There appears little doubt that this creature was human because the fossil remains prove he stood erect with legs longer than arms; hip, thigh, and foot bones were not those of the ape; and the canine teeth in both upper and lower jaws were reduced.

Genesis 1:27-30. (sixth day) And God created man to his own image: to the image of God He created him: male and female He created them. And God blessed them, saying: Increase and multiply, and fill the earth, and subdue it, and rule over the fishes of the sea, and the fowls of the air, and all living creatures that move upon the earth. And God said: Behold I have given you every herb bearing seed upon the earth, and all trees that have in themselves seed of their own kind, to be your meat: And to all beasts of the earth, and to every fowl of the air, and to all that move upon the earth, and wherein there is life, that they may have to feed upon.

(Four hours before midnight) . . . 2,160,000 years ago . . . 4,728,240,000 years since Earth was created. The evolutionary development of man is well underway as the next step, "Homo habilis" (the handiman), turns up.

(EN) - As far as can be determined this human was merely a transitional link between Australopithecus Africanus and Homo erectus.

(Two hours and thirty minutes before midnight) . . . 1,350,000 years ago . . . 4,729,050,000 years since Earth was created. The first man with a large highly

developed brain 800 to 1000 c.c., "Homo erectus," has evolved.

> (EN) - This five-foot primitive man was a hunter as evidenced by the charred bones of animals found along side his fossil remains. He made artificial shelters from branches, used fire and designed large assortments of stone tools and crude weapons. He was the first to make a written record by drawing on bones. Though Homo erectus was a slow mover he spread himself over the temperate zones of Asia, Africa, and Europe.

(Ten minutes before the end of the year) . . . 90,000 years ago . . . 4,730,310,000 years since Earth was created. A short, stocky advanced form of man, "Neanderthal," with a long low head, projecting face and heavy eye ridges is on Earth.

> (EN) - Scientists cannot account for the extremely large brain possessed by Neanderthal man, over 1450 c.c. to 1600 c.c. He used caves as his main source of shelter; he was the first to take on family life; and he hunted large game along the borders of the ice fields and glaciers. Among his many accomplishments was the making of flint balls, perforators, discs, scrapers, stone and bone tools and weapons and the use of minerals for pigments. Some form of religious belief existed as corroborated by the fact that he ceremoniously buried his dead. Fossil remains of Neanderthal man have been discovered in Palestine, Iraq, Gibralter, and in other parts of Europe, the Middle East, and Africa.

(Five minutes till midnight) . . . 45,000 years ago . . . 4,730,355,000 years since Earth was created. Since Australopithecus found his place on Earth other life forms have begun, such as rodents, giant red deer, sabre-toothed tigers, woolly mammoths, lions and bears.

(Four minutes and thirty seconds until the end of the year) . . . 40,500 years ago . . . 4,730,359,500 years since Earth was created. Late Homo erectus and Neanderthal man suddenly vanished from every part of the world and were replaced by a new human, "Cro-Magnon." This creature has a 1350 to 1450 c.c. brain, stands six feet tall, walks upright, has a well-developed forehead and chin and does not have the main evolutionary traits associated with his predecessors. This is the final entry in the Earth Log as phase one of the galactic experiment is completed.

(EN) - Over the next few thousand years Cro-Magnon man evolved into Homo sapiens (wise man), and finally into you-and-me types, Homo sapiens sapiens (modern man).

The change from primitive beings to modern type man was simply too great and too abrupt to happen by chance. Also, there is no known evolutionary step that accounts for this new type human. To demonstrate how widespread and rapid the change was, let's examine the fossil records of modern man found around the world. North Africa, Zambia, Southeast Asia, and Sunda Island fossils are thirty to thirty-five thousand years old.

Within the relatively short period of from five to ten thousand years every living man belonged to the same species, Homo sapiens, which is divided into three sub stocks: Caucasoid (white), Negroid (black), and Mongoloid (yellow). Everywhere, from Europe to North Africa in the west, to China and Australia in the east and south, modern man was in control of the world. Even the most extreme evolutionist asks the big question, "How did Cro-Magnon man come about and what happened to Homo erectus and Neanderthal man?"

What Do the Experts Say?

Dr. William Howells: Professor of Anthropology, Harvard University. "In Europe the cave Neander-

thaler came to a relatively quick end, and their place was taken by a different kind of man, who was entirely like ourselves. This is one of the clearest events of human history. You could write a novel about this and people have done so, but these must remain novels. We only know that, in Europe, Homo sapiens, Cro-Magnons came to stay and the Neanderthal vanished."

Dr. Ashley Montagu: world-famous researcher, author, teacher, and writer of more than 30 books and several hundred articles. He has taught at Harvard and New York University, as well as being former chairman of the Department of Anthropology at Rutgers University. He stated, "Cro-Magnon man is a modern man in every sense of the word, but where he came from or how he came about we have not the slightest idea."

Bjorn Kurten: Professor at the University of Helsinki and leading paleontologist. He worked extensively in Europe, Africa, and North America, and has published about eighty scientific articles. He remarked, "Almost everywhere either Neanderthalers or late Homo erectus were replaced more or less suddenly by modern types of Homo sapiens. Moreover, these invaders show different racial traits, which must have taken some time to evolve. But, where did Cro-Magnon originate?"

With the foregoing factual information provided it is quite obvious that man, alone and unaided, could not have undergone such a transformation, that is, to jump the evolutionary span from late Homo erectus and Neanderthal man to Homo sapiens sapiens. Therefore, the only logical explanation is that beings from some other advanced civilization outside of this world, who had much earlier evolved into Homo sapiens sapiens, came to this planet with the sole intent to assist Earth man in compressing the evolutionary scale by millions of years, probably through interbreeding. If my theory is correct, than we twentieth-century human beings are decen-

dants of a combination of earthling and extraterrestrial scientists as Phase One of a gigantic galactic experiment.

> Genesis 6:1-4..men began to be multiplied upon the earth and daughters were born to them. The SONS of GOD seeing the DAUGHTERS of MEN, that they were fair took themselves wives of all which they chose. Now giants were upon the earth in those days. For after the SONS of GOD went in to the DAUGHTERS of MEN, and they brought forth children, these are the mighty men of old, men of renown.

The preceding imaginary "Earth Log," indicated that of the 365-days of this planets existence, man occupied less than a half day. First man, "Australopithecus" appeared during the last nine hours and "Cro-Magnon," modern man, replaced all other human life with only four minutes and thirty seconds remaining.

If the daily record of incidents had continued it would have shown when man suddenly and unexplainably became civilized, when Christ was born, the great world wars, atomic and hydrogen bombs and space travel.

Man is now at the crossroads where a log could record two different sets of events. 1. Germ or all out nuclear warfare resulting in the end of all life on earth. 2. The abolition of war, elimination of disease, advanced space exploration, and the possible contact with other human intelligent life on infinite numbers of planets.

Which road will man take?

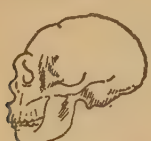
EVOLUTIONARY DEVELOPMENT OF EARTH MAN

14-million years ago, "Ramapithecus," the first pos-. sible man-like creature with a small, 500 c.c., brain came into existence.

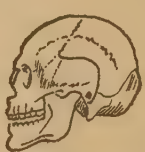
5-million years ago, "Australopithecus" (Southern Ape), the first definite members of the human family, with a 600 c.c. brain evolved.

2-million years ago, "Homo habilis" (the handiman), a transitional link between Australopithecus Africanus and Homo erectus, turns up.

1-million years ago, "Homo erectus," the first man with a highly developed brain, 800 to 100 c.c., has evolved.



90,000 years ago, "Neanderthal," an advanced form of man with an extremely large brain, over 1450 to 1600 c.c., makes his appearance.



40,000 years ago, "Cro-Magnon" arrived everywhere in the world, unexplainably replacing all earlier forms of man.

3

The Instructors

GALACTIC EXPERIMENT—PHASE II

After the world-wide change over from Homo erectus and Neanderthal to Homo sapiens sapiens was completed, there appeared to be no indication of either assistance or interference throughout the early years of earth man's evolutionary development. It was as if the extraterrestrial scientific experimenters were just biding their time, waiting and watching from afar.

Little in the way of real civilized advancement occurred during the thousands of years that followed. For example, it took 2,000 years to progress from discovering how to use salt on food to the invention of a common saucepan.

The early stages of Cro-Magnons cultural development began with the Eolithic man, who used crude stone tools. About 12,000 years ago the Paleolithic people developed into definite stone tool users. From the period of 10,000 to 7,000 years ago, Neolithic man moved up into a polished stone tool and weapons class. He made knives, ax-shaped tools and hoes from flintlike stones. A classic example of this stage of man can be found as far back as 8,000 years ago in the Assyrian highlands above the Tigris River,

where the inhabitants were mostly farmers who cultivated wheat and barley and raised cattle, sheep, goats, and pigs. About 7,000 years ago the Aeneolithic people switched from all stone to copper tools and weapons. These are just some examples of the progress early man was making and certainly cannot be described as rapid.

Without explanation about 6,500 years ago, Phase II of the galactic experiment apparently went into operation as man reached an evolutionary condition whereby the communications gap could possibly be spanned. The second mysterious evolutionary jump happened, but this time man's intellect was accelerated from an ancient primitive environment to a civilized, well organized, creative system of society. This did not happen all over the world, to all Homo spaiens at the same time. The first four basic civilizations sprang up out of nowhere, in Asia. The first earthly civilization was that of the Sumerians, located on the plains in the basin of the Euphrates and Tigris Rivers; then the Egyptians who inhabited the Nile Delta and Valley; next the Indus people occupied two sections along the Indus River Valley in Southwestern Asia and finally the Chinese who were cut off from the rest of the world by the seas and a ring of high mountains and plateaus. They developed their culture along the Yellow River.

As I studied the four distinct civilizations, they seem to have been selected as a nucleus for the spreading of world-wide civilization. Why and how people in four basic areas of the ancient world developed from primitive societies into urban cultures without the benefit of formal education, to this day remains a scientific mystery. Or is it? Open your mind. Remember, everything started from point zero and that man is a slow step by step creature. Giant steps in development rarely happen in the rapid twentieth century, let alone six and a half thousand years ago. Careful examination of the quadcivilizations will show how they got the rest of the world off to a running start.

SUMER

An extended region in Southwestern Asia, enclosed by the lower Tigris and Euphrates Rivers, commonly called Mesopotamia (the land between the rivers), was the site of the birthplace of world-wide civilization. Approximately 6,500 years ago, nine communities established a settlement which was later to become known as Sumer Akaad. Over the following 750 years, before Egypt had emerged from the stone age, the Sumerian civilization had already reached the city-building stage. Before Egypt had succeeded in developing a national culture, the Sumerian civilization was a flourishing center of early culture and had achieved extraordinary advances in the arts and sciences.

They spoke a jumbled language that was unrelated to any other known language of the world and developed the cuneiform script (wedgelike, straight lines representing words) system of writing on soft clay tablets. The script system became the basic means of writing for the entire Middle Eastern nations during the next 2,000 years.

Sumerians were the first metallurgists as demonstrated by their extensive use of copper and tin for weapons and tools; they knew soldering, riveting, and how to cast gold. They invented and perfected the wheel for their war chariots; initiated arithmetic and geometry; instituted the idea of using money; and created an unprecedented abundance of art and built monumental architecture. At one of the nine cities, "Ur," a great temple towering 80 feet, 200 feet long and 140 feet wide was constructed. Centuries later Ur was to be prominently marked in history as the birthplace of "Abraham," the founder of the Jewish nation.

The Sumerians irrigated their farmlands and cultivated their fields with ox-drawn plows; their crops included wheat, barley, vegetables and dates. Science and schooling for children were also promoted.

Sumer reached the height of its economic and cultural advancement in the period between 5,000 and 4,500 years ago. During the following 500 years, the once great nation fell under the onslaught of Elamites and Amorites, two nomad tribes. The Sumerian Akkas civilization was adopted almost in its entirety and became part of the old Babylonian kingdom.

EGYPT

Pharaoh Menes unified the tribes of Upper and Lower Egypt along the Nile Valley about 1,500 years ago. The second of the four fountainhead civilizations settled along the Nile Delta and unquestionably received some of their initial cultural influence from Sumer. The next 300 years produced the first elaborate above ground tomb of arch-work construction and stone masonry, and the introduction of the basin system of irrigation within the Nile Valley.

History records that Egypt developed a superior economy and culture so quickly that current science is at a loss as to how the transition from a relatively primitive society could take place or what could have caused it. Leaders of Egypt seemed to know and understand advanced technology, architecture, engineering, science, medicine, tools, and systematic government. It was as though tremendous knowledge was given to certain leaders by scientists from a more advanced civilization.

The beginning of the Golden Age of Ancient Egypt was marked by the rule of Pharaoh Zoser about 4,780 years ago, and continued for the next 250 years. An elaborate series of engineering projects were launched including the first great stone structure, the Step Pyramid (Djoser), erected near Cairo. This monument is still standing today and represents the oldest large stone building in the world. The Step Pyramid was designed by Pharaoh Zoser's friend, Royal Architect and Seer, Vizer Imhotep. He was a very remarkable man because in addition to his architectural

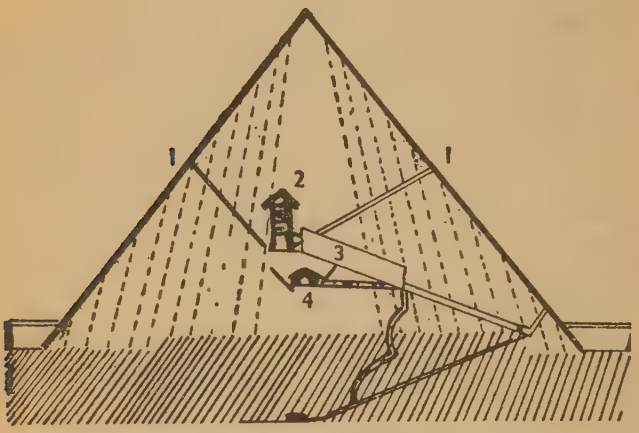
and engineering ability he was also a physician, astronomer, priest, writer, and wise man (sage). I cannot help asking how Imhotep could possibly have learned all he obviously knew without the advantage of higher education, which of course did not exist.

The industrial arts and sciences flourished; a new form of writing (hieroglyphics—picture words), was perfected. Among the other remarkable features of this civilization were the invention of flexible paper (papyrus reed) advanced writing; implementation of taxation; standard measures of length and capacity; astronomy, navigation, elementary surveying, mining and working with copper; the artistic use of wood, ivory, stone and gold; fine jewelry, beautiful sculpture, painting, glass work, glazed pottery, and the creation of the finest hand-loomed linens; practical mathematics, including several mathematical formulas, notably that for computing the area of a circle; the establishment of a solar calendar based on a 365-day year; a water clock and the sundial. In the science of medicine, remarkable knowledge of physiology, surgery, and the circulatory system of the blood was understood.

While listing the accomplishments of the early Egyptians no work would be complete without a look at the pyramids. The pyramid age lasted for 500 years. On the east side of the Nile on the border of the Libyan desert, extending for a distance of almost twenty-five miles north to south, there are approximately 75 pyramids. They were mainly built of hard limestone from the nearby hills; however, large granite blocks weighing tons were somehow transported great distances.

Considered to be among the seven wonders of the ancient world is a group of three pyramids constructed between 4,680 and 4,565 years ago and located 4 miles southwest of Cairo near Gïzeh. Two of them were built by Pharaohs Khafre and Menkure and measure 690 and 354 feet square, standing 447 and 203 feeet high. About 350 yards from the famous Sphinx is the Great Pyramid of Cheops believed built by Pharaoh

Khufu. Made up of 2,300,000 stones, ranging in weight from 2 to 50 tons each, it is estimated that more than 100,000 workers and slaves were used over a twenty year period to complete the 481 feet, 50 story high, 13 acre structure. Without outside, highly intelligent supervision, ancient man of the time could not have constructed the massive monument, for man lacked the technological know-how, tools, and proper heavy equipment to do the job.



The Great Pyramid of Ghiza
1. Air ventilating shafts. 2. Pharaoh Khufu's burial chamber. 3. Main gallery. 4. Unfinished Queen's burial chamber.

We have all seen drawings of thousands of men hoisting large stones on rope pulleys and hundreds of slaves rolling huge stones through the streets of ancient Egypt. That's Hollywood's impression but a realistic look shows a different picture.

The individual strength of workers and slaves was low and the amount of food needed to feed them would have been astonomical. As for the logs needed to roll the stones, the only trees available in the area in any great number were palm trees. If the builders placed a

fifty-ton stone on a couple of palm logs, and if they could possibly roll it over the sand, by the time they reached the site of the pyramid there would be nothing left under the huge stone except a pile of sawdust!

A large grave site would also have to be close by to bury the thousands of crushed bodies that would most certainly have been killed in a project of rolling and lifting gigantic stones. Excavations in the region have disclosed no grave sites containing hundreds of broken remains.

Against all odds, such as the tremendous size of the stones, the incredible number of manual laborers required, the shortage of skilled workmen, and the lack of heavy equipment needed to place the heavy stone blocks into position; the Giant Pyramid was indeed built.

The only logical explanation that I can offer for the building of the pyramid at Gizeh, was to leave the world a chronicle of the visitor's knowledge. They most likely knew that papyrus and parchment scrolls would probably be destroyed by time or man so they created a gigantic library of scientific data in the form of an indestructible, huge "stone time capsule." The scientific structure would stand throughout the ages as a monument, until future man gained enough knowledge to be able to find the key that would unlock the puzzle.

Listed are the amazing series of secrets thus far uncovered within the structure and measurements of the Great Pyramid. Some say the interpretations are not facts but merely coincidence. The Great Pyramid is:

- a calendar and clock casting shadows on particular points when spring arrives, on the last day of the year, and the hours of the day.
- an observatory pointing the way to the North Star through a shaft from the King's chamber.
- a compass as one of the sides points due east. This should not have been feasible 5,000 years ago because the first crude compass was not invented until 3,700 years later.
- a key to world travel as diagonal lines extended out from the pyramid enclose the Delta of the Nile; the

center line followed around the world cuts the Nile Delta, the habitable continents and Pacific Ocean exactly in half. The slant height of the pyramid is one six hundredth of a degree of latitude. The length of a side is one eighth of a minute of a degree of latitude.

• a study in matchematics using the metric system of measure, thousands of years before the modern scientific rebellion following the French Revolution. The height of the pyramid multiplied ten million times equals the distance of Earth to the sun. Divide the sum distance of the pyramid's sides by twice its height and you get pi (3.1416) which was discovered thousands of years after construction. Take the height measure, use that exact distance to draw a circle and it will be the precise measurement of the square area of the pyramid's base. Take the approximate weight of Khufu's monument, 600,000 tons, multiply it by one-billion and that is the estimated weight of Earth, 6,595,000, 000,000,000,000,000 tons.

The evidence disclosed by the Great Pyramid of Gizeh should be enough to convince the most hardened pessimist that humans of ancient Egypt had to have been supervised by people eons ahead of the earthly evolutionary time table.

CHINA

The history of China began in the Yellow River Valley thousands of years B.C. It is interesting to note that legend tells of a creator, Pan-Ku, who was succeeded by a series of heavenly, terrestrial, and human sovereigns. At the end of the Neolithic age, probably about 6,000 years ago, two distinct cultures appeared and apparently evolved on the north China plain. It was not until 4,700 years ago that we find any documented evidence of a Chinese ruler. Even of that person little is known beyond the fact he built roads and organized the Empire into administrative departments.

The ancient Chinese were literary people and their

literature dates back well over 4,000 years. They created their own form of writing, where each word was represented by a symbol or character and the same word stood for a variety of different ideas. The exact meaning of each symbol had to be decided by its position in a sentence. The written characters were more hieroglyphic in origin or possibly crude copies of objects the writer was trying to express.

Music was very popular in China 5,000 years ago; in fact one of the Emperors believed that music caused his subjects to neglect their duties so he decreed all music playing banned in China. It was during the reign of model ruler Yao, 4,356 years ago that Confucius began his famous works.

China developed a unique and elaborate civilization but took no part in the early development of world history. The Chinese were very suspicious of the civilizations developing in other parts of Asia. They were confident that their ways were supieror to all others, so they closed themselves away from the rest of the world and remained a land of mystery for many ages.

Obviously it is very clear that the Chinese did not learn their arts and sciences from the outside world. I could call attention to many of the Chinese accomplishments but there is one, that to this day is truly a fascinating mystery; the ancient Chinese medical procedure known as Acupuncture. What do we really know about it other than it was discovered and developed by Chinese surgeons around 4,700 years agò? I will attempt to explain this complicated ancient art of healing as simply as possible.

Various tissues of the human body are punctured with long fine needles of different lengths from one to ten inches. The needles can be made of silver, gold, iron, or steel and may be used either hot or cold. The needles are manipulated in different parts of the body; 360 Acupuncture points.

Acupuncture is used to treat a wide range of ailments from releasing fluids to producing local anesthesia during surgery and alleviating postoperative pain.

Its purpose is also to relieve pain and internal congestion in rheumatism, asthma, epilepsy, arthritis, migraine, and a variety of other physiological disorders.

In the twentieth century Acupuncture is widely used in Chinese hospitals, by private practitioners in Japan and the United States and is rapidly being accepted worldwide as a breakthrough in the practice of modern medicine. As of this writing no scientific explanation has yet been offered for this medical phenomenon. The opinion expressed by some physicians that Acupuncture works merely to humor the patient or as a psychological or hypnotic remedy has been disproved by Chinese scientists who have successfully produced anesthetic effects in animals using the same method.

How could the ancient Chinese discover and develop a medical procedure as complex as Acupuncture without the benefit of higher education and the research facilities of a medical university. The answer is—they could not; but we know they did . . . but how?

INDUS

Of all the mysteries of civilized man's earthly cultural appearance, the highly developed ancient inhabitants of the Indus Valley, along the Indus River in Southwestern Asia, is the most understood. The Indus Valley people flourished 4,500 years ago.

Within a seven mile radius of their twin-city cultural center were wide streets, modern sewage, drainage, public and private sanitation systems including indoor bathrooms in many houses. Communities of 50,000 solidly constructed houses were laid out in city-block style each covering 200 to 400 yards.

The Indus maintained a highly civilized and organized central government not equaled until the Roman Empire almost 2,000 years later. They communicated by writing as indicated by a small amount of written material that was found. The strange part is that twentieth century scholars are still unable to decipher their writings.

They developed artistic skills as demonstrated by their clay and beautifully shaped wheel-turn-pottery; gold, silver, semi-precious stones and costume jewelry. They made dice, children's toys and baby rattles; spun cotton and wool and wove it into cloth. Bronze and copper were expertly worked not only for decorative pieces but also as simple household tools and hunting weapons.

The Bronze Age was started by the Indus about 4,200 years ago. How they were able to figure that a small amount of molten tin mixed with molten copper would make the strongest substance known to man of the time, has never been satisfactorily explained.

As they approached the end of their 1,000 years of cultural existence, about 3,500 years ago, their scientists once again opened another door, this time to the Iron Age. However, the use of iron for tools and weapons came too late to help the Indus nation as invasions and flooding caused a slow decay that ultimately led to their being conquered by the Asians (Aryans).

Twentieth-century scholars continually uncover evidence that certain people of pre-historic times were taught a high degree of scientific information. This is the only way it could have happened because the people of the day were not capable of the kind of accurate examining and separating of ideas that educated men and women of today possess.

The instructors may have been an inter-stellar team of scientists whose assignment was to provide the necessary information so that civilization on Earth would get underway. The evidence that such information suddenly existed is very impressive and the aliens had to have exercised prehistoric man's intellectual powers beyond his natural abilities.

Without the seeds of civilization planted 7,000 years ago by the intergalactic instructors, Earth man of the twentieth-century could still be living in a primitive environment.

WHAT NATION WILL BE THE WORLD LEADER OF TOMORROW?

25 Most Populated Countries

COUNTRY	1973 U.S. CENSUS BUREAU POPULATION	NUMBER OF YEARS UNTIL POPULATIONS DOUBLE†
1. China	792,677,000	41
2. India	596,000,000	32
3. U.S.S.R.	248,626,000	77
4. U.S.A.	211,000,000	116
5. Indonesia	128,121,000	26
6. Japan	106,663,000	53
7. Brazil	101,582,000	25
8. Bangladesh	75,382,000	26
9. Pakistan	64,461,000	24
10. West Germany	61,806,000	#

History of World Populations

YEAR OF RECORD	YEARS ELAPSED	WORLD POPULATION
1 A.D.	....	250,000,000
1750	1750	791,000,000
1800	50	978,000,000
1830	30	1,000,000,000
1850	20	1,300,000,000
1900	50	1,700,000,000
1930	30	2,000,000,000
1950	20	2,500,000,000
1960	10	3,000,000,000
1973	13	3,900,000,000

Projected population figures from the United Nations show what will happen if the 2% per year growth continues.

11. Nigeria	58,148,000	29
12. United Kingdom	55,956,000	231
13. Mexico	54,963,000	20
14. Italy	54,642,000	116
15. France	51,921,000	116
16. Philippines	41,288,000	22
17. Thailand	39,075,000	25
18. Turkey	37,737,000	27
19. Egypt	34,705,000	32
20. Spain	34,675,000	63
21. Korea	33,435,000	35
22. Poland	33,202,000	77
23. Iran	32,778,000	22
24. Burma	29,213,000	30
25. Ethiopia	26,947,000	27

1975	3	4,000,000,000
2000	25	6,400,000,000
2073	75	12,000,000,000

* * * * * * * *

One out of every ten people added to the world population comes from advanced nations. The remaining nine people come from poor, underdeveloped countries

* * * * * * * *

United Nations figures show that the world wide birth rate has been declining, however, the individuals life expectancy has increased by 20-years.

* * * * * * * *

‡ Insignificant increase in 1972.

† Number of years to double the population based on continuation of 1972 rate increase figures.

It is interesting to note that all four basic civilizations were different and only one still exists. The first civilization of Sumer was a warring nation; the second, Egypt was cultural; the third, China was a recluse and the fourth, Indus was peaceful. Could it be that the galactic instructors experimented with the different civilizations to find out which would survive or contribute the most?

HISTORY REPEATS ITSELF

For some unknown reason, not a single nation has been able to maintain itself indefinitely as a leading world power. Many times history shows a leader taking charge of a particular society, instructing and initiating educational programs for its citizens and through superior planning and building is able to take the world leadership away from a preceeding world power.

It's strange, but once the mysterious impetus, whatever or whoever it was that acted as the instructor-leader is no longer on the scene, the accelerated society becomes complacent and usually, through default, loses its lead. No matter how hard they try, it appears inevitable that they take their proper position in the world-wide evolutionary scale with the rest of mankind.

Citizens of leading nations, while on top, are many times considered to be a superior race, but that belief is short-lived as another nation, sometimes previously considered backward, takes over and upsets the balance of world power.

History of Power

Sumeria - Indus - Chaldea - Babylonia - Egyptian Empire - Phoenician Empire - Grecian Empire - Assyrian Empire - Roman Empire - Persian Empire - Byzantine Empire - French Empire - British Empire.

1933 to 1945 - Germany - Italy - Japan versus USA - England - Russia.

1945 to ? - United States of America - Union of Soviet Socialist Republic - Peoples Republic of China.

4

Surveillance and Observation

GALACTIC EXPERIMENT—PHASE III

Science deals with information and knowledge built on, and supported by, facts. The first phase of nearly every scientific experiment starts with an idea, a theory, which is put into operation. When the necessary ingredients are added, the second phase goes into effect. The final observation phase is the most important and time consuming as the waiting, watching, and sampling of the experiment are carried out.

If we on Earth are part of a gigantic galactic experiment, and I believe we are, then the observation phase started thousands of years ago, is continuing and probably will continue for thousands of years to come.

The evidence is very strong that Earth has been visited over many centuries by at least one, technically superior civilization. Engraved marks on bones, designs found in caves, paintings and prehistoric space junk tell us part of the story.

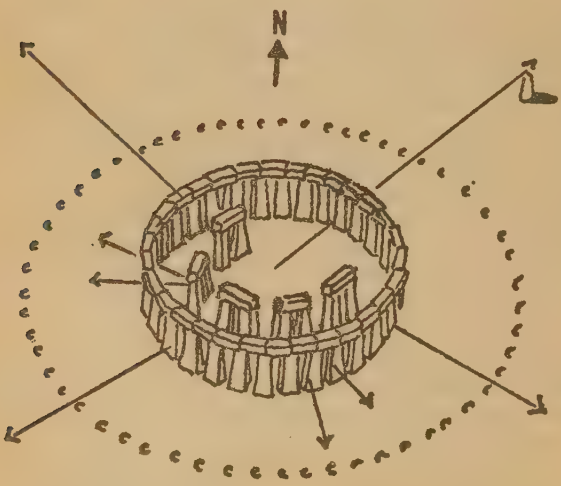
With regard to the objects left behind, it is not unusual for even today's scientists to discard what they no longer need. A good example is the United States and Russian space programs. Tons of one time useful scientific equipment are now just floating debris in space, on

the surface of the moon, and burned out space probes lying on distant planets. The only difference is that the extraterrestrial scientists used Earth's natural resources to build their astronomical observatories and crude computers. What they left behind are huge puzzling structures, great pyramids, unexplainable statues, and roughly dressed stones.

STONEHENGE

On England's barren Salisbury Plain, south of London, Stonehenge has been a mystery to historians and archeologists for centuries.

The solid stone block ruins indicate that the construction problems were stupendous and why such an ambitious project was attempted is anyone's guess. Whoever designed the unique stone pattern 4,000 years ago was far ahead of other world men of the time.



The area consists of a series of circles of holes and stone structures within smaller circles of holes and

stone structures. The outer circle is about 100-feet in diameter, and was probably originally composed of 30 huge, 26-ton stones that stood about 13-feet high, were seven-feet wide and three-and-a-half feet thick. Every two stones supported a huge 10-feet long stone slab.

The inner circle was arranged in a horseshoe pattern, 75-feet in diameter consisting of five groups of 50-ton stones, 18-feet high. The stones are hard sandstone boulders that could only have been lugged or dragged from Marlborough Downs, 25 miles to the north. The stones had to be shaped into roughly rectangular blocks before being placed upright.

The last group of stones was formed by 22, seven-feet high, four-ton bluestones that were hauled over sea and land from a mountain range in the southwestern corner of Wales, a distance of 250 miles.

Several facts have been uncovered regarding the multi-purpose structure that could only have been built and designed by people possessing a thorough knowledge of astronomy. Scientists calculate that the odds of Stonehenge's design being merely coincidental are more than one in a million.

- Stonehenge appears to have served as a great astronomical observatory, highly accurate complex calendar, and crude computer.
- The positions of the different stone structures and various holes kept track of the sun and moon and forecast and calculated the complicated nine-year cycle of the moon.
- The first day of summer, winter, spring, and fall are accurately indicated.
- The 56 outer holes, covering nearly 300 feet in diameter, kept track of the 56 cycles of eclipses of the moon.
- More than 20 pair of other key phases of the moon and sun are predicted by Stonehenge's crude astronomical computer with outstanding accuracy.

Possibly instructors from the same planet that as-

sisted with Egypt's Great Pyramid of Ghiza were also present at Stonehenge.

EASTER ISLAND

About 2,300 miles west of Chile and more than 1,200 miles east of Pitcairn Island, where the mutineers from the English Ship Bounty settled in 1789, lies the mysterious Easter Island. The small, 48-square mile volcanic Pacific Ocean Island is like many of the others except for the remains of 600 extraordinary stone statues standing and lying on the hillsides.

The 3,000 year old figures, weighing as much as eight-tons each and up to 40-feet in length, depict the upper section of the human body with huge heads and elongated ears and noses. Some of the monuments were crowned with large, 30-ton, round-brimmed hats of volcanic rock.

The soft volcanic rock for the statues came from the island's volcanic crater where explorers recently found a tremendous 70-feet long unfinished statue. Further excavations uncovered hidden caves containing tablets covered with finely carved and stylized figures which seem to form picture writing. To date scholars have been unable to translate any of the tablets and no satisfactory method of interpreting the symbols or why the mysterious, gigantic lava sculptures were created, has been found.

One more mystery in this seemingly fictional story is that even though every inch of Easter Island has been searched, there is no sign of a city or a community having ever existed.

TIAHUANACO

High on a plateau, 30,000 feet above sea level in the Andes mountains of Bolivia, 30 miles southeast of Lake Titicaca was the holy city of Tiahuanaco. This

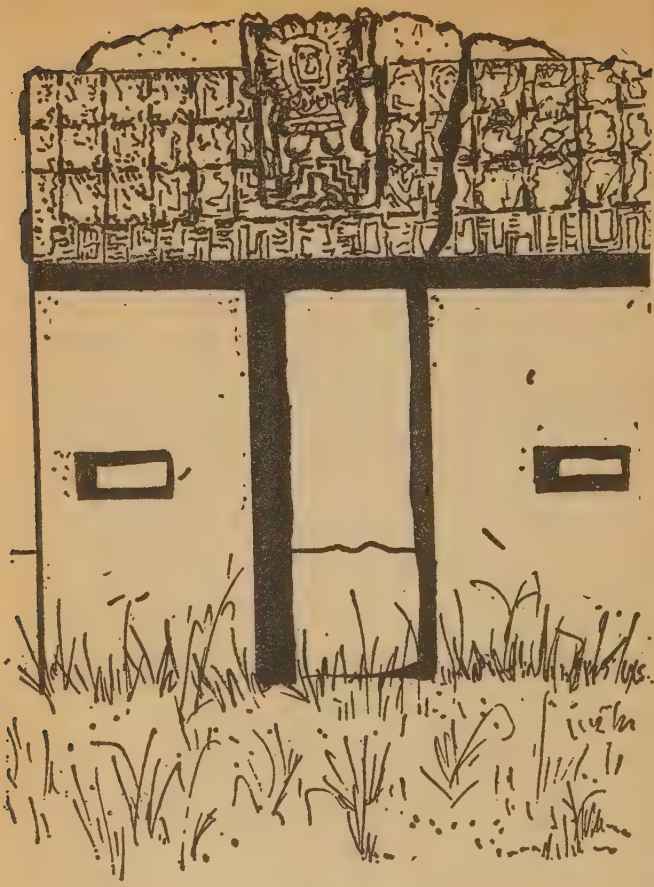
prehistoric culture was older than the Inca kingdom and represented an entirely different people.

To date scientists have uncovered many details of the Tiahuanaco's lost empire. They were semi-civilized, their masonry workmanship revealed them to have been the most skillful in all of South America and yet they had no writing and no inscriptions have been found to help decipher their fantastic story.

From radiocarbon testing it has been determined that the construction period took place over 2,000 years ago. A 50-feet high pyramid was the largest single unit constructed at the site. Working with only bronze and stone tools, colossal blocks of stone were fitted together to form mighty encircling walls. These walls were firmly embedded in the earth and covered the city's 125 acres. The most famous monument on the site, "The Gateway of the Sun" was an enormous 10-feet high sculpture, carved from a single 10-ton, 16-inch thick, 12½-feet wide block of andesite. The extremely hard rock was covered with a distinctive style of carved ornamental decorations. The Gateway, like the Great Pyramid of Egypt, also faced due east. Another puzzling fact is that all the construction, including enormous stone steps, platforms, an impressive square surrounded by tremendous standing stone figures, enclosures and underground chambers, were bonded together without the use of mortar.

When the Incas conquered the region they found Tiahuanaco already deserted. The Aymara Indians of the region would just repeat the legend that the builders of the city on the top of the mountain were of the devil. Spanish monks also spoke of the legend that only devils could have moved and piled such tremendous stones on such a high mountain.

Archeologists say that from the little evidence available, the barren plateau civilization was never heavily populated. Yet thousands of people would have been needed to transport the heavy stone blocks from quarries located more than three miles down the mountainside. After the rough, huge boulders were on top of



the mountain, additional thousands of skilled people would have been needed to work and chisel the stones into designed structures. Finally, how could these structures have been placed into position?

I can imagine the stones flown to the mountaintop by some type of aircraft and the work directed by pow-

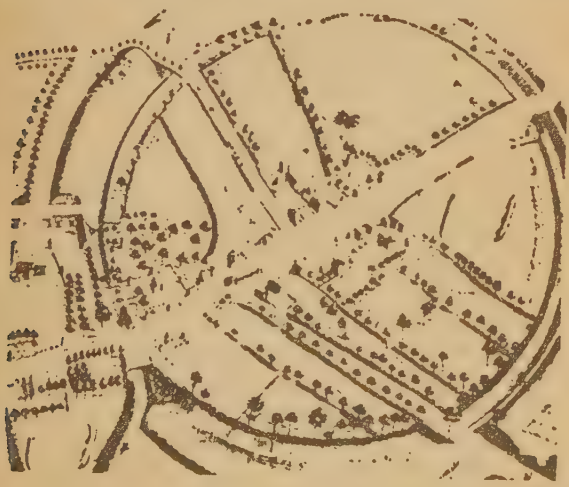
erful instructors. But I cannot understand how man was able to work and survive at altitudes almost twice the considered critical height. Doctors in the aviation medical field told me that there is no way that men could perform at 30,000 feet. Pilots flying above 15,000 feet must have their air artificially put under pressure or they would most certainly black out.

To this day the answer to the mystery of Tiahuanaco remains hidden in the cloud-shrouded Andes.

AVESBURY

The largest stone circle site in all Europe lies in 28½ acres in Avesbury, England, a short distance from Stonehenge. The circle of 100 stones, weighing up to 40 tons, covers nearly 1,100 feet.

The precise measurements of the stone placements indicate they could not have been erected by disorga-



Avesbury Circle, England is an outstanding example of megalithic astronomical architecture.

nized primitive people 4,000 years ago. Because of the tremendous size of the area, I can only conclude that Avesbury's use was designed to be seen from the air.

SILBURY HILL

One mile south of Avesbury is the largest man-made mound in Western Europe called Silbury Hill. The mound rises 130 feet, displaces a volume of 12½ million cubic feet and covers 5½ acres.

Scientists suspect that the giant mound houses the tomb of the master builder of Stonehenge; however, if the grave is there, it has resisted every attempt to uncover its secret. According to carbon dating the mound at Silbury Hill was constructed about the same time as Stonehenge and for no apparent earthly reason.

Scholars are continually uncovering evidence proving that the mysterious designers possessed advanced scientific information. The latest measurements of their monuments, structures, or crude computers show that they had a superior understanding of twentieth-century surveying techniques.

MODERN MAN BEFORE HIS TIME

More fossil bones have been found in the last five years by anthropologists in Tanzania, Kenya, and Ethiopia than had been uncovered since man began keeping fossil records.

Over the past few years three separate discoveries, in Africa, shocked the scientific world because for the first time proof was found that modern man, (Homo sapiens sapiens) was on Earth millions of years ago.

The first discovery of modern man's remains, dating back over 100,000 years, was made in December 1970 in a Bomva Ridge cave on the border between Swaziland and Natal in South Africa. Two prehistorians, Adrian Boshier and Peter Beaumont uncovered 300,000 artifacts, charred animal bones of long extinct

creatures, various pieces of fossilized human skull and bone plus the Homo sapiens sapiens skeleton of an infant. The people must have had a religious belief for the child's body had been ceremoniously buried. This information also indicates they spoke a well-developed language because abstract ideas such as immortality cannot be conveyed by gestures and grunts.

The second find turned up in 1972 in the East Rudolph Basin near Kenya, South Africa. Anthropologist Richard Leakey, director of a museum in Kenya and son of the famous husband and wife team, discovered a skull and leg bones indistinguishable from modern man yet, 2.8 million years old.

Information about the third discovery was recently made public by anthropologists from a joint American, French, Ethiopian expedition. Near the Awash River in the central region of Ethiopia additional evidence that this world was occupied by modern man millions of years ago was brought to light. The expedition found the fossil remains of Homo sapiens sapiens in the form of a complete upper jaw with all teeth in place, half of an upper jaw with all teeth in place, half of an upper jaw and half of a lower jaw both with teeth. Preliminary dating indicates the fossils may be about 3.5 million years old.

The big question is, that of the thousands of discovered fossil bones, why only three instances of Homo sapiens sapiens. A logical theory expressed by many scientists is that the remains could be those of extraterrestrial scientific observers, some in family groups, who were stationed on Earth millions of years ago. There just doesn't seem to be any other logical answer, for if you recall the "Earth Log" in chapter two; modern man (Homo sapiens sapiens) made his first appearance about 40,000 years ago. Before that time, with the exception of the three above cases, there is no record of their existence. The fossil remains discovered in Africa are unmistakably those of modern man but millions of years too early in the evolutionary scheme of things.

I am implying that an organized society was on Earth and maintained measurement standards and an astronomical tradition. It has taken man centuries, thousands of years to accumulate the kind of knowledge used in the construction of many of the ancient stone structures left behind.

I believe that the observation phase is still in progress, operating within the Limbo of the Lost.

5

Sampling the Experiment

ANSWER TO LIMBO OF THE LOST (Bermuda Triangle—Devil's Triangle)

This book was written chiefly because of the recurring question I've been asked as to what I believe happens to the ships, boats, planes, and people disappearing in the Limbo of the Lost area. I would orally give my in-depth theoretical explanation but nowhere was it in written form. The situation had to be corrected so I began compiling the necessary data.

In the process of gathering correct dates, times, places, names, and other related information to support and prove my theory, additional new exciting information kept cropping up, in turn requiring further research.

I am a reporter, not a scientist and because a great deal of the information in this book is of such a highly technical nature, I believed it was absolutely essential to go to literally hundreds of different scientific sources to obtain the necessary factual information and to verify the accuracy of my work.

While doing exactly that, I discovered an unbelievable situation within much of the scientific commu-

nity. In nearly every instance the various learned men of science were helpful and very willing to give freely of their advice and assistance to my project; but on the other hand, many were unwilling to allow their names to be used in connection not only with this book, but with any book or work having to do with a belief in UFO's. In a few instances I had to sign statements that I would never disclose their names or where or how I obtained the scientific information.

I do not agree with their way of thinking for it is my belief that fear must never become a part of the scientific method; nevertheless, I will honor their requests and keep their names private.

Not a Triangle

The first point I want to make is that the terms "Bermuda Triangle" and "Devil's Triangle" are misnomers. The area in question is not, was not, and never will be triangular-shaped. The sole explanation for this mythical design could have come only from the imagination of some other authors; I suppose because three's and triangles superstitiously represent mystery, death, and intrigue. I have fought the triangle-shape battle since 1969 and am sorry to admit I've had little or no success.

Where Is It?

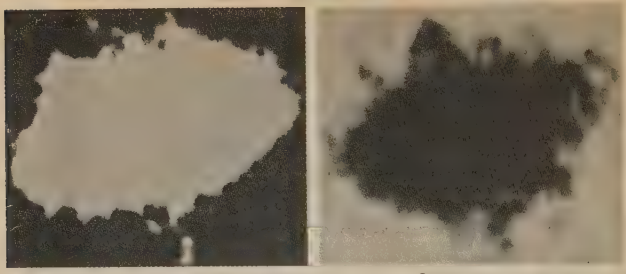
The mysterious region covers 380,000 square miles of sea and coastline extending from Cape May, New Jersey, down the continental shelf of the eastern seaboard of the United States, arcs around Bermuda, through the West Indies, and winds up in the Gulf of Mexico. How anyone can make a triangular design out of that shape I will never know.

How It Got Its Name

In the late 1960's I did not have the slightest idea as to what was causing the mysterious disappearances. The research and writing of my book were complete but I still had to come up with a descriptive title. I

Now, the answer to the riddle...

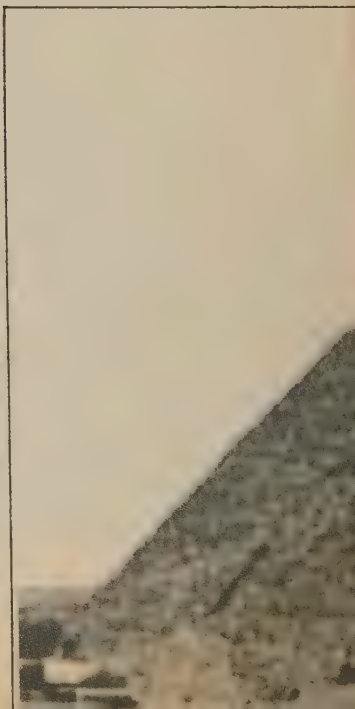
1973—The Year of the UFO



On September 9, 1973, Daniel Keever photographed two small orbs of light which appeared much brighter than the surrounding stars.
NICAP PHOTOS

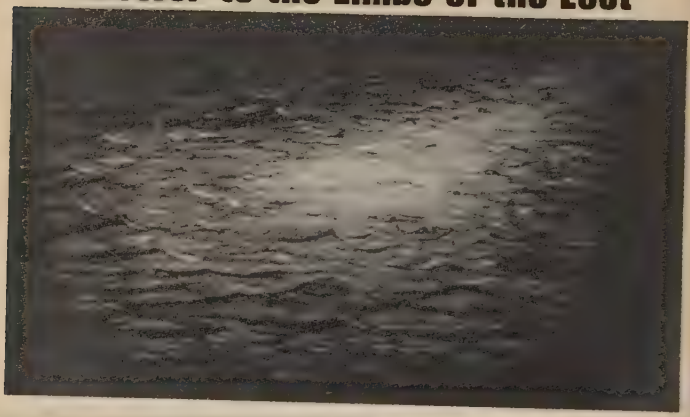
This Planet Is Undergoing a Galactic Experiment

The Great Pyramid of Gizeh should be enough to convince the most hardened skeptic that humans of ancient Egypt must have been supervised by creatures eons ahead of the earthly evolutionary timetable.



Dr. Bruce A. Rodgers, member of the National Investigations Committee on Aerial Phenomena, believes that "whoever builds and operates these vehicles possesses a technology beyond anything known on our planet."
NICAP PHOTO

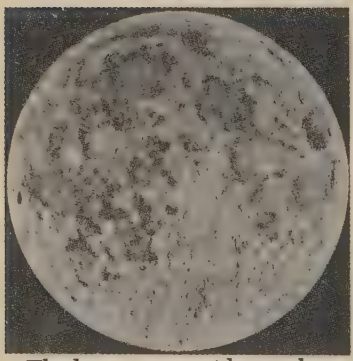
Answer to the Limbo of the Lost



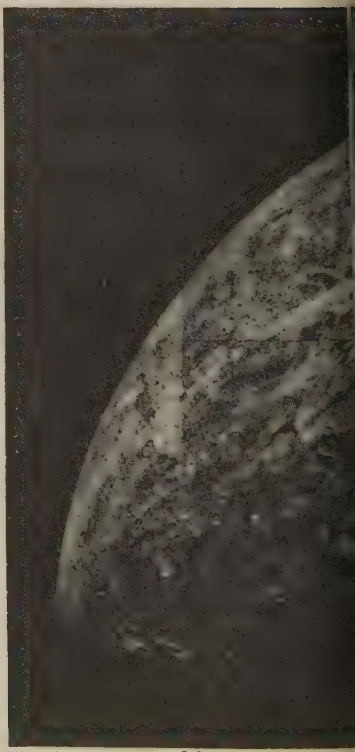
eports indicate interest by the occupants
f UFO's in our large bodies of water, especially within the
imbo of the Lost region. UFO's
ecome USO's—Unidentified Submerged Objects.
NICAP PHOTO

The extraterrestrial scientists leave their underwater facility, take what they need and return to their hidden labs. This U.S. Army helicopter crew barely ecsaped.
NATIONAL ENQUIRER

A Journey Into Space



The heavens provide another realistic theory as to where outer space visitors come from.
NASA PHOTO

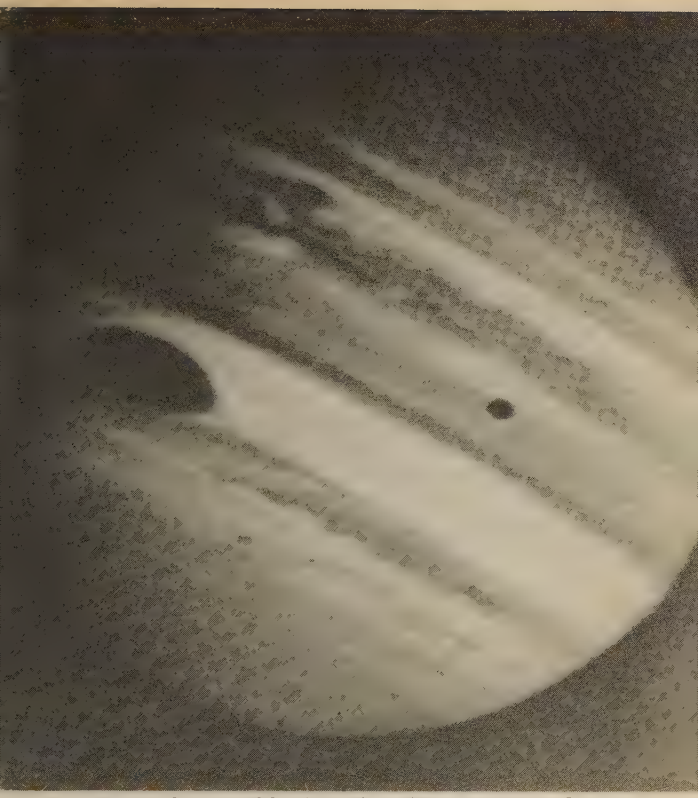


It is impossible to imagine

ny form of life surviving on Mercury.
NASA PHOTO

For life to exist under the conditions found on Venus would require adaptations beyond logic or imagination.

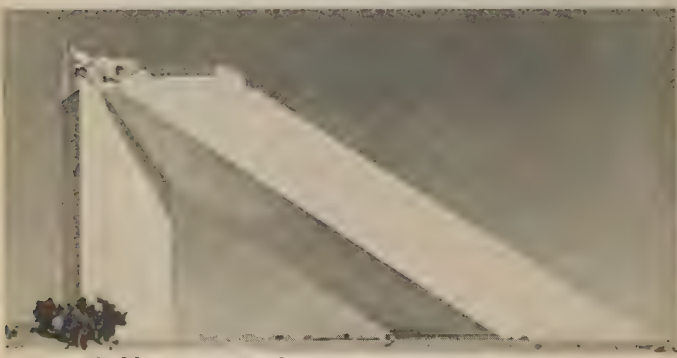
NASA PHOTO



It may be possible that life will be discovered
on one or more of the four planet-sized moons of Jupiter.
NASA PHOTO

Does Other Life Really Exist?

Some of the technically advanced civilized nations have been searching for radio signals from outer space. England's radio telescope at the Jodrell Bank, near Manchester, covers a 5,000-square-yard area.



Aided by gigantic telescopes, scientists have reached far out into the vastness of remote space in an attempt to find evidence of extraterrestrial intelligent life. The solar telescope at Kitt Peak National Observatory, Kitt Peak, Arizona.

Probing the Solar System

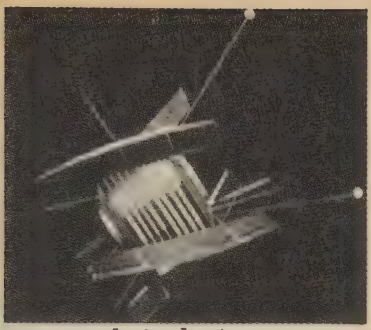
NASA officials are planning a series of High Energy Astronomy Observatory missions to probe the gamma and cosmic rays. Is this the new edge of the space frontier?

NICAP PHOTO

After passing the Jovian surface, Pioneer II will take the first look at Saturn for signs of life.

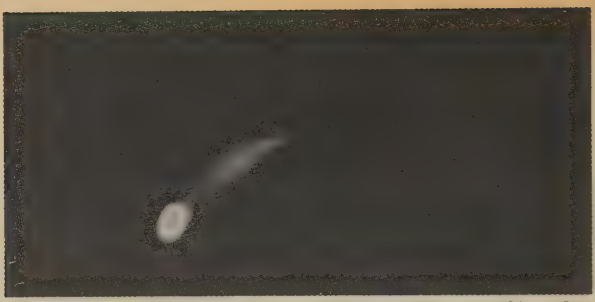
NASA PHOTO

On May 14, 1973, the U.S. initiated the Skylab program placing an unmanned space station into Earth's orbit.
NASA PHOTO

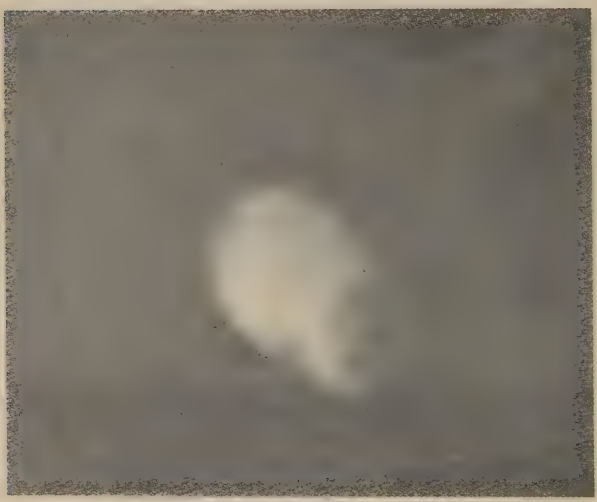


Using the Radio Astronomy Explorer satellite, astronomers were able to make a low-frequency radio map of the Milky Way.

NASA PHOTO



Photograph released by NASA of the object filmed by astronaut James McDivitt, June 1965.
NASA PHOTO



Unidentified object photographed by Gemini XI by astronauts Conrad and Gordon, September 1966.
NASA PHOTO

started with the fact that the ships, boats, planes, and people did indeed vanish, disappear, were "lost." As far as the investigators—Navy, Coast Guard, and various insurance companies—were concerned, the craft and missing people were in suspension, neither here nor there, "Limbo." Since there was no particular shape to the region I simply put the two words together and came up with "Limbo of the Lost."

It's Still Going On

Just about every week new losses were being reported, mainly small planes and boats; however, a Lloyd's of London source stated that within the period 1963 to 1973, 60 ships carrying over 900 people mysteriously vanished without a trace. In 1967 alone 15 heavy vessels simply disappeared under eerie circumstances. In every situation, no SOS radio distress message was received and no bodies or wreckage found. In spite of radar, radio, modern search technology, lifesaving apparatus and speed, thousands of people and their craft have been and still are mysteriously disappearing without logical explanation, at least no earthly explanation.

Hunting for an Answer

While trying to find an answer as to what was happening in the mysterious area, I looked for a common factor that would offer a logical explanation, a common factor like similar weather conditions, (hot, cold, clear, stormy, calm, windy) similar season or period, (summer, winter, spring, fall; time of year, month, week, or day). I tried every combination possible, even lunar conditions. After months of exhaustive research I still had nothing; if a common denominator existed, I could not find it.

Nowhere Else

Next I played the numbers game, taking every area of the world where there was a heavy concentra-

tion of both air and surface travel and together with their unexplained losses, had the information fed into a computer. I wanted to know if there were any other regions of the world where similar losses were happening. Contrary to the misinformation printed in some publications thriving on sensationalism, only one other area could be found where there was an unusually large number of unexplainable sea mysteries. As for the rest of the world the computer gave me the answer in the form of a graph based on a scale of one to a hundred. The Limbo of the Lost area registered at the one hundred mark while the next nearest so-called mysterious region scored only five. The only exception was a relatively small section of the ocean southeast of Japan where ships and boats have been disappearing for more than a century. Despite radio communications almost a dozen large ships vanished in the early 1950's in the Devil's Sea, without leaving a trace.

In 1955 the Japanese government decided to find out once and for all what was happening out there in the Pacific; they loaded a large vessel with the latest in scientific equipment and, with a team of scientists, set sail. Several days later the expedition could not be reached by radio; a search was launched, but to no avail. The hunter apparently became the hunted. Since 1955 world shipping has been avoiding the Devil's Sea region and for the most part the losses have stopped.

I Checked Them All

I investigated every lead, one by one; checked out all guesses, from science fiction to supernatural bizarre theories; from natural phenomena to far-fetched answers. I listened to the explanations of pseudo experts on weather, sea, and air; I patiently endured the ramblings of doubting Thomases and hard-core unbelievers; I talked with people who obviously needed psychiatric help and I was plagued by the habitual liar. I do not want to present a completely negative picture, for

there were many helpful, sincere people who offered good, solid logical explanations.

Listed below and put in their proper categories are some of the different theories I checked out.

SCIENCE FICTION ANSWERS

Invented rather than fact; made-up, unproven scientific theories usually designed to stimulate the imagination with intriguing, exciting stories. Many scientists have been inspired by science fiction theories because it is only through the imagination of man that the door to creation can be opened.

Time Warp—Fifth Dimension
Hole in the Sky—Atmospheric Aberration

Some people express a belief that the answer to the Limbo of the Lost lies in one or more of these unearthly situations. They say that the hapless ships, planes, and people unfortunately got caught and were transported away to some other time or place. As far as can be determined, at least thus far in the twentieth century, there is not the slightest shred of real scientific evidence leading to the belief in any such probabilities.

Edgar Cayce

The tale of a magical stone once used for converting the sun's rays into energy by the citizens of Atlantis, expressed by Edgar Cayce, represents the answer for some of his followers. They believe that Atlantis sank beneath the Limbo of the Lost area and every so often the mysterious stone becomes active and through its tremendous energy disintegrates whatever gets in its way, such as ships and planes.

Giant Reversed Vortex

This proposed theory suggests that a giant upside-down whirlpool in the air sucks up boats, ships, and people and hurls them into outer space. No record of any such situation.

Mayan Civilization

The creation of a mysterious energy source (deadly laser light beam) is credited to the Mayan civilization, and every once in a while is believed to become active and go haywire, chalking off another ship or plane.

ATMOSPHERIC ANSWERS

Compass North

The Limbo of the Lost area and Devil's Sea region of Japan coincidentally happen to be located in areas where magnetic deviation can be as much as 20 degrees. Some theorists state that if a navigator did not know about this situation and failed to compensate for the difference he would find that his ship or plane had strayed far off course and possible disaster.

On the surface this theory is good except the magnetic deviation problem has been known for many years and corrective action was taken by all chart makers. The deviation is accurately measured and all navigational charts clearly show the variations by agonic lines. Even the rankest amateur navigator would hardly make such a foolish mistake, let alone an experienced navigator charged with the safety of a gigantic merchant ship or commercial airliner.

Magnetic Storm

This theory has come up many times probably because of the radio conversation between Ft. Lauderdale Naval Air Station and the flyers aboard the five TBM Avenger torpedo bombers that disappeared in December, 1945. The pilots stated that their navigational instruments had gone haywire and could not tell which direction was west.

Even though the true nature of the magnetic storm is not fully understood, some scientists state that they believe magnetic storms are related to sunspots, which are cyclones or whirlpools a hundred thousand miles wide in the white-hot envelope of gas that surrounds

the sun. Sunspots have not only been blamed for magnetic storms but have also been credited with being behind the display of the aurora australis and borealis. Ship captains and airline pilots who have been in magnetic storms, without exception, report that the incidents were of a very short duration, certainly not long enough to throw them very far off course.

Solar Winds

A stream of protrons and electrons shooting outward from the sun at a speed of from 200 to 500 miles per second are called solar winds. Few people believe this to be the cause of the losses. Obviously solar winds cannot account for the answer, because it's illogical to believe that Earth could be bombarded with enough force to disintegrate ships and planes without its presence being detected and observed by many quarters. In addition, Earth is protected from solar winds by the Van Allen radiation belt that extends out from Earth to about 40,000 miles and is, in effect, held in place by our magnetic field.

WEATHER AND SEA FACTORS

Sea Serpents

Many times after lectures I have been asked whether the ships could have been dragged to the bottom of the sea by a gigantic sea serpent. There are only two creatures that remotely fall into that category, the octopus and the eel.

The largest known octopus (O. Vulgaris) is found in the Mediterranean Sea and the European Atlantic coast. This creature attains a diameter of about seven-feet; however the American Pacific coast octopus (O. Punctatus) reaches a diameter of about 14-feet. Another seagoing creature that could be mistaken for a sea serpent is the eel. There are 400 species of this snake-like fish and it has been suggested by some oceanographers that the possibility exists of an unknown adult (leptocephali) eel reaching a length of 45-feet or more.

Another species of the American eel (A. Vulgaris) has been known to exceed 10-feet in length.

There has never been a documented case on file of an octopus or eel ever attacking a boat or ship, or for that matter a person other than in self defense.

Whirlpool

It has been suggested more than once that the possible answer lies in gigantic whirlpools; that the ships and boats are sucked down into their rapidly spinning waters.

The Sargasso Sea is a giant whirlpool; however, motor-driven craft have never experienced a dangerous situation within its confines that could not be logically explained. This infamous area is like the eye of a storm and most often is completely devoid of winds. Sometimes sailing vessels have been held fast in its center because of exceedingly calm conditions.

Some smaller whirlpools slowly move sailing vessels toward jagged, rugged coastal rocks. Dangerous whirlpools with a rapid strong twirling motion have been known to be extremely violent and have sucked small boats into their rapidly down-spiraling cavities.

Of all of the explanations offered for the losses, this surely makes the most sense. On the other hand, even if a small boat had been pulled into a dangerous whirlpool and all hands were lost, some debris should have floated to the surface to tell the tale.

The likelihood of this being the answer for all or the majority of the losses is rather remote because it does not give us an explanation for the loss of large vessels of heavy tonnage or aircraft, nor does it tell us why ships and boats turn up in an excellent condition with no sign of the crew.

Whirlwinds and Waterspouts

The whirlwind-waterspout theory is very weak because they are seldom, if ever, termed violent. Water whirlwinds, commonly called waterspouts are simply whirling columns of air and fresh watery mist extend-

ing from a cloud to the surface of the water. An extremely small craft might be turned over by one of these waterspouts but a boat of any size or plane would easily go through undisturbed. Contrary to some statements I've heard, waterspouts have never been classified as seagoing tornadoes. Under the rarest of conditions a waterspout might turn into a tornado but the conditions would have to be perfect, and the waterspout would have to be in the midst of a violent thunderstorm at sea.

Giant Waves

A good theory for possibly a few of the losses but certainly not all or the majority, is that ships and boats have been engulfed by giant waves 40 to 80 feet high. Waves of this height are usually found in the North Atlantic but I suppose a rare wave or two might possibly strike in the Limbo of the Lost area.

Gulf Stream and Violent Weather

The Gulf Stream consists of swift waters but not of the calibre that could be classified as dangerous. As for unexpected violent storms, the use of radar for weather detection and radio weather checks precludes this explanation as the total answer. I cannot imagine a professional seaman or pilot getting caught by an unexpected violent storm at sea. Amateurs can get into trouble and that is why my book, Limbo of the Lost, deals primarily with the professionals aboard commercial vessels and aircraft.

Plate Theory

The Earth consists of layers of rock that are continually shifting. As these flat rock layers move under the Limbo of the Lost area, the theory is that sometimes they separate so quickly that they cause a tremendous suction. Supposedly the ships and boats are pulled down into that hole and are never heard from or seen again. There is no record of any such situation.

Human Error

This is always a possibility for some of the losses but certainly not for the majority. Private boats and planes disappear in great numbers and I believe the main reason is human error. But I cannot use the same logic when it comes to professional seamen and pilots.

THE ANSWER

While conducting my investigations, UFO's continually entered the scene as a possible answer. Because of my background as a UFO investigator, I thought it was too much of a coincidence and dismissed there being any connection. Not until an undisputable pattern began to unfold did I realize I had been rejecting the only real logical explanation.

As I went over the records I wondered why I didn't immediately recognize UFO's as the answer to the puzzle; the evidence was so clearly overwhelming. If aliens from some other world could travel through the vastness of outer space, their space ships would have to be air tight. With their obviously advanced technology, certainly their craft would be capable of operating underwater.

The history of the UFO's becoming USO's (unidentified submerged objects) and vice versa is not new. For centuries eye-witness reports described circular objects, like round amphibious aircraft, landing on the ocean. Some reports told of the objects settling on water, then diving like submarines; others reported seeing UFO's shooting off the water and flying off at tremendous speeds.

Over the years there have been enough well-qualified witnessed reports to indicate an apparent interest by the occupants of UFO's in our large bodies of water, especially within the Limbo of the Lost region.

19th Century

"About half past 3 o'clock this morning (August 12, 1825) the middle watch on deck was astonished to

find everything around them suddenly illuminated. Turning their eyes to the eastward they beheld a large, round, luminous body rising up about seven degrees apparently from the water to the clouds, and falling again out of sight, and a second time rising and falling. It was the color of a red-hot (cannon) shot and appeared about the size of the sun. . . It gave so great a light that a pin might be picked up on deck."

On June 18, 1845, the British brig "Victoria" was lying almost becalmed in the Mediterranean, about 100 miles north of Malta. Suddenly, strong gusts of wind began to batter the ship. As quickly as it had come, the wind subsided. Shortly afterward, the captain and the crew saw three shiny discs rise from beneath the surface of the sea. After hovering briefly half a mile from the ship, the three discs ascended vertically and went out of sight.

One evening in May, 1880, two large, luminous rotating "wheels" were observed close to the British India Company steamer "Patna." The strange objects, apparently just below the surface of the sea, appeared singly and together on both the starboard and port sides of the vessel.

Since these early reports cannot be rechecked, there is no way of knowing whether the stories are accurate. But in a number of the 20th century reports there have been careful investigations, including long interviews with witnesses and checking of their reliability.

20th Century

The most detailed of these cases involved a large UFO seen in 1945 by crew members of the U. S. Army Transport "Delarof," which had been hauling munitions and supplies to Alaska. The reporting witness was Robert S. Crawford, a consulting geologist with the Indiana Soil Testing Laboratory, Griffith, Indiana. Craw-

ford is a graduate of the University of North Dakota, and while at the college he reported the sighting to Professor N. N. Kohanowski, Department of Geology, who is a NICAP adviser. In 1967, Mr. Crawford was interviewed by Dr. James E. McDonald, a scientist at the University of Arizona, who under a university grant has personally investigated numerous UFO reports.

The Delarof incident occurred in the summer of 1945, while Crawford was serving as one of the Army radiomen aboard. The ship, heading back to Seattle, was in the open sea past Adak. It was about sunset, and Crawford was on the port side, near the radio room, when he heard shouts from some of the crew. He turned and saw a large round object which had just emerged from the sea. (Several crewmen saw the UFO actually appear from underwater, an estimated mile or so from the "Delarof.")

The unknown craft, showing darkly against the setting sun, climbed almost straight up for a few moments, then it arced into level flight, and began to circle the ship. All the observers were convinced it was a large object. Comparing it with the width of a finger held out at arm's length, Crawford estimated the UFO to be 150 to 250 feet in diameter.

As it circled the Delarof, the flying object was in easy range of the ship's guns. But the gun crew held their fire, though on the alert for any sign of hostility.

The UFO circled the vessel two or three times, moving smoothly and with no audible sound. All the witnesses felt it was self-propelled; otherwise, the strong winds would have visibly affected its movements.

After several minutes, the flying object disappeared to the south-southwest. Suddenly the crew saw three flashes of light from the area where it had vanished. The Delarof captain posted an extra watch as the ship moved through that sector later, but nothing was seen.

At Seattle, 14 crewmen signed a summary of the sighting.

July 22, 1955, Santa Maria, California; witnesses reported that a long silvery object emerged from the water.

September 15, 1962, Oradely, N. J. Oval-shaped UFO reported splashing into reservoir, then quickly taking off. (Other UFO's were reported hovering over the reservoir in 1966; witnesses included the mayor and police officers.)

Year of 1966; date deleted. An AF active-duty jet pilot with the rank of captain, who is a NICAP member, reported that a group of Service pilots had seen a large disc-shaped object rotating under the surface of the Atlantic Ocean. The sighting was at night, while the pilots were on a routine mission, and the UFO was clearly visible because of its brilliant blue-green glow. (Because of the active-duty status of the AF captain and the other pilots, names, the date and identifying details have to be omitted).

June 3, 1967, Ontario, Canada. Shortly after 10 p.m., a Lake Kipissing buoy tender observed green and white lights between two small islands. Thinking another boatman might be in trouble, the buoy tender headed toward the lights. He was about 100 feet away when the lights rose from the water "with a whoosh" and sped off into the night.

On the evening of October 4, 1967, an unknown flying object was sighted by a large number of residents at Shag Harbor, Nova Scotia. Though an exact shape of the UFO was not discernible, its movements were indicated by a series of bright lights which slanted down toward the harbor. In full view of the witnesses, the lights were seen to glide into the water and disappear.

Official Search

Within 20 minutes, several constables of the Royal Canadian Mounted Police were at the scene, at-

tempting to reach the spot where the UFO appeared to have submerged. A Coast Guard vessel and eight fishing boats also joined in the search.

A large patch of yellowish foam and bubbling water was revealed by the searchers' lights, unlike anything ever seen in the area. Navy divers continued the search for two days, but according to reports to the press no trace of the UFO was found.

This incident touched off the disclosure of a special UFO investigation department.

RCAF Concerned

A spokesman for the Royal Canadian Air Force, Squadron Leader Bain, stated that the RCAF received hundreds of UFO reports every week. "But the Shag Harbor incident," he said, "is one of the few where we may get something concrete on it."

John Fairfax, who rowed across the Atlantic, recorded a sighting in his log for May 5, 1969, as follows:

"I saw two UFO's shortly after sunset. Since I don't believe or disbelieve in such things, I will report without comment. They appeared at 11:30 GMT as two very bright stars, about twice as bright as Venus. I was rowing at the time and almost directly facing them. They remained stationary for about five minutes, then moved erratically for a while, went east again, then lost altitude until they almost touched the horizon. One shot upward, then climbed fast toward the Ursa Major. I don't want anybody to think that I mistook them for stars. They were not satellites. I see satellites almost every night. They could not have been balloons either, because the shadow of the Earth would have prevented me from seeing them. They were a bluish color. Their show lasted about 20 minutes."

On June 30, 1970, Heyerdahl's papyrus boat, Ra II was approximately 700 miles east of its destination, Barbados Island in the West Indies. At 1:30 a.m. (ship

time), navigator Baker, the only American aboard, ended his watch and called down to Heyerdahl to dress and come on deck. As he made his final check of the sky and sea, he noticed a bright silver light down on the horizon off the starboard bow. The light resembled a dome in shape and gave much the same apppearance as the rising moon.

Baker shouted to Heyerdahl, who came on deck moments later (still dressing), followed by another member of the crew, Santiago Genoves, a Mexican anthropologist. As the three men watched, the light began to grow in size, as though pumped with air like a balloon. As it expanded, it retained its hemispherical shape but diminished in intensity.

In talking with NICAP, Baker emphasized that the light "was many times brighter than the moon" and kept its clear semi-circular configuration until late in the sighting. It cast a path of illumination across the water, like a moonbeam, and at one point silhouetted two small clouds that had drifted between it and the boat.

Continuing to distend, as Heyerdahl and the others watched, the light spread out along the horizon like a giant mushroom cloud. Then, gradually, it began to lose its distinct configuration and become more of a diffuse bright area. After being in sight for appproximately eight minutes, it finally surrendered all clarity and merged into the night sky.

Unbeknown to the men on the Ra II, another ocean going vessel had spotted the strange light of June 30 and was observing it with equal bemusement. The ship was the m.v. Themis, operated by the Royal Netherlands Steamship Company of New York. Sailing for Jamaica, the Themis was off the coast of Florida when the sighting occurred.

The first crewman to see the phenomemon was F. Vida-Gonzales, a lookout, who alerted Third Officer S. Stoel. Stoel watched the "bright white circle" for a few

moments, then notified Radio Officer H. Stel and the ship's captain, A. Jongeling.

Watching from the starboard wing of the ship's bridge, the four men saw the light expand and illuminate the sky around it. Unlike Heyerdahl, they could see it in its entirety, well above the horizon. It expanded in all directions and exhibited the same regularity of shape noted by Baker, before losing its luminosity and dissolving into the sky.

Both the Ra II and the Themis reported clear weather during the observation, with only a smatttering of clouds. The stars were out, and Baker particularly remembers the clarity of the Milky Way. The moon was not due to rise for several hours.

None of the witnesses, despite each's familiarity with the open ocean, could identify what he saw or offer a likely hypothesis.

On November 6, 1973, Raymond Ryan, 42, reported seeing an unidentified underwater object in Mississippi's Pascagoula River. He reported the strange object had a light on it and followed his boat. Ryan left the river and summoned his twin brother, Rayme. The two of them went back to the brackish water, found the object and poked at the source of light with their oars.

The Coast Guard station in New Orleans said that the Ryan twins told them about their encounter with the underwater craft. The spokesman said, "At 9:40 p.m. the Coast Guard at Pascagoula dispatched a 16-feet boat to investigate the reported object. It was located in four to six feet of water moving at about six knots. An amber beam, about five feet in diameter, was attached to a large bright, metal object."

Coast Guard officials said that even though it was a bright moonlit night, the glow was very clear through the river water. Coast Guardsmen at the scene tried to retrieve the unidentified underwater object but, "it would appear to go out and move away and then reappear;" finally, it simply vanished.

WHY USE OUR WATERS?

Extraterrestrial pilots wishing to suspend aerial operations or experiencing mechanical or technical difficulties with their craft could easily put down on water and submerge to relative safety and seclusion because five-sevenths of this planet is covered with water.

Safety is probably a prime factor because many times ground landed UFO's have been approached with the intent to capture the occupants, or even worse, shoot them. Even landing on barren deserts would not free the alien visitors from observation by military aircraft and again, possible harassment.

Seclusion is also probably very important because it is obvious they want to be isolated from Earth beings. Even though we have been conducting continuous deep sea exploration all over the world, relatively little is known about the vast majority of our oceans; in fact, more is known about the galaxy than our seas.

One of the great challenges of modern science is why no part of the ocean flooor can be found to be older than 200-million years. Most scientists agree that the age of Earth is around 4,500-million years; so what and where was the ocean floor during the first 4,300-million years of development; nobody knows.

Extraterrestrial scientists probably use our lack of knowledge about the seas to protect their underwater housing and laboratory facilities from discovery. The continental shelf along the eastern seaboard of the United States is extremely shallow, about 650-feet in depth. The shelf merges into the continental slope and continental rise, eventually descending to the ocean floor. It may just be a coincidence but the third greatest ocean depth in the world, the "Puerto Rico Trench," is located within the Limbo of the Lost area. This trench is more than 5-¾ miles deep, while the average ocean floor is only about 2-½ miles.

To be assured of isolation, depth would naturally be of the utmost importance to the aliens, therefore, I

would think they would excavate large cavern facilities, deep within the Puerto Rico Trench, stretching back under the continental shelf. These facilities would allow them to operate undetected by sonar, submarines, and even the bathyscaphe.

WHY THIS AREA?

The Limbo of the Lost region is the most heavily traveled area in the world; both surface and air travel is constantly on the go. If the extraterrestrial scientists are in the observation phase and occasionally find it necessary to sample their experiment, then what better place in the world could there be. Private planes and boats, commercial airliners, commercial vessels, anything from one-man dinghies to gigantic ocean liners sail the region in great numbers.

It seems that sometimes they want many people, and other times just one or two; occasionally they check our craft, but in just about every case nothing is left behind, no debris, oil slicks, or bodies either dead or alive. Whenever they want someone or something for their experiments they simply leave their underwater facility and take what they need and return to their hidden laboratories.

HOW THEY DO IT

A question that was very difficult to answer was how could they take an airplane out of the sky, or lift a boat from the ocean? I theorized some time ago that they had the means to electronically latch on to whatever or whoever they wanted. Proof of my theory came to the attention of the world on October 18, 1973, when Army Captain Lawrence J. Coyne, a veteran with 10 years of military flying, left Columbus, Ohio, at 10:30 p.m. He had no idea his helicopter trip to Cleveland would be one of the most unusual flights he or any of his three crew members had ever made.

Forty minutes after take-off, the 'copter was travel-

ing at 2,500-feet on a northeast course in the vicinity of Mansfield. Suddenly one of the crew, Staff Sgt. Robert Yanasek, spotted a red light on the eastern horizon. After watching it a few moments, Yanasek advised Coyne that the light was moving and appeared to be heading directly toward the helicopter. Coyne immediately took over control of the aircraft putting it into a shallow dive.

As Coyne later described, "At seventeen hundred feet I braced myself for the impact with the other craft. It was coming from our right side. I was scared. There had been so little time to respond. The thing was terrifically fast."

Just as collision seemed imminent, the object came to a sudden stop about 500 feet over the 'copter, permitting Coyne and his crew to get a good look at it. The craft had a large, gray, metallic-looking hull about 60 feet long, shaped like a streamlined, fat cigar. There was a red light on the front and the leading edge glowed red a short distance back from the nose. There was a center dome. A greeen light at the rear reflected on the hull and swiveled like a spotlight, shining brightly through the bubble canopy of their helicopter, completely flooding out the red instrument lights and turning everything inside the helicopter green.

Coyne got on the radio and tried to contact the Mansfield tower. The radio was operating, but it would not transmit or receive. Coyne said, "I couldn't get the keying sound and there was no reception."

With the green light still illuminating the 'copter, Coyne looked at his instruments. He was shocked to see the needle of the altimeter rising. "I could hardly believe it was reading 3,500 feet, climbing to 3,800. I had made no attempt to pull up. All controls were set for a 20-degree dive, yet we had climbed from 1,500 to 3,800 feet with no power in a matter of a couple of seconds with no G-forces or other noticeable strains. There was no noise or turbulence either."

The eerie ascent lasted only a brief moment; then

"we felt a bounce and the other craft took off to the northeast." After seven or eight minutes, radio contact was established with the Akron-Canton Airport.

ANOTHER HELICOPTER VANISHED

The Captain Coyne incident was not the only case involving helicopters and UFO's. In 1967, off the coast of South Carolina, within the Limbo of the Lost region, a U. S. Navy ship (destroyer) lost a helicopter with three crewmen aboard.

(EN)-At the request of the witness in this case his name and the name of his ship have been omitted.

The reliable witness reported that a destroyer stationed nearby "heard" the helicopter hit the water (on the destroyer sonar equipment), and steamed to the area of the crash in a matter of minutes. Nothing was ever found in the crash area to indicate the helicopter had gone down—no wreckage, life jackets, nothing.

$50,000 REWARD

The ENQUIRER is continuing its offer of $50,000 to the first person who can prove that an Unidentified Flying Object came from outer space and was not a natural phenomenon.

Send us your evidence. The reports will be screened by our editors and Jim Lorenzen, international director of the Aerial Phenomena Research Organization, Inc., and Jack Acuff, president of the National Investigations Committee on Aerial Phenomena. The best ones will be forwarded to The ENQUIRER's Blue-Ribbon Panel on Unidentified Flying Objects, composed of five of the country's top scientists and educators. The panel will examine the evidence thoroughly, and if they agree unanimously that the UFO is not a natural phenomenon and came from outer space, this newspaper will give a check for $50,000 to the person who supplied the evidence.

The ENQUIRER also offers awards of up to $5,000 to anyone judged by the panel to have supplied the most scientifically valuable evidence on UFOs, though not the proof required for the main award.

If several informants are involved in any one case, the panel will decide on how the award money should be distributed.

This offer is valid throughout the world. It shall not be construed as an inducement to betray any military secrets of the United States. Mail evidence to: UFO Reward, NATIONAL ENQUIRER, Lantana, Fla. 33462.

National Enquirer - June 23, 1974

Enquirer Awards $5,000 to Helicopter Crew for 1973's Most Valuable UFO Evidence

By ALLAN A. ZULLO

A four-man U.S. Army helicopter crew that experienced a terrifying midair encounter with a UFO has won a $5,000 award from The ENQUIRER's Blue-Ribbon Panel on Unidentified Flying Objects.

"It's an extraordinary exciting case which has posed a most impressive challenge to science," said the panel, which awarded the money to the crew for supplying the most scientifically valuable UFO evidence for 1973.

The panel — composed of five leading scientists and educators — met in New Orleans April 20 to consider five claims, out of hundreds submitted to The ENQUIRER, for the $50,000 reward offered for the first positive proof of the existence of UFOs.

The panel members agreed unanimously that none of the claims merited the $50,000 award, but all voted in favor of giving $5,000 to the helicopter crew for their UFO experience.

Panel member Dr. Frank Salisbury, professor of plant sciences at Utah State University, explained: "The only thing that holds us back from awarding the $50,000 prize is that although this is one of the strongest sightings we've come across, it is purely a witness sighting without tangible evidence, such as photographs."

The bizarre incident occurred on the night of Oct. 18, 1973 — about 50 miles south of Cleveland. Major Larry Coyne, the helicopter pilot, was shaken up by the appearance of a UFO. "The UFO was dangerously close," Coyne said.

In the December 16 issue of The ENQUIRER, they described the UFO as a 60-foot-long cigar-shaped, metallic gray object with a dome on top, and said it hovered over the helicopter for a few seconds.

At the moment the UFO had swooped overhead, the helicopter was at an altitude of 1,500 feet and going down. But when the UFO vanished seconds later, the chopper was at 3,800 feet. Such a rate of ascent is impossible for a helicopter that takes a full minute to climb 2,000 feet under maximum power.

The Army has taken an uncharacteristic interest in this incident:

"We have no reason to doubt the truthfulness of Major Coyne's report," admitted Lt. Col. Andrew Sullivan, Army spokesman at the Pentagon in Washington. "Major Coyne and his crew were the people closest to the object and they have reported their findings to us. The incident is described in our records as the sighting of an unidentified flying object."

Panel member Dr. James Harder, professor of engineering at the University of California at Berkeley, said: "I can't find any holes in their story."

Added panelist Dr. Robert Creegan, professor of philosophy at State University of New York in Albany: "Their instruments confirm that they encountered this strange phenomena. I think it is one of the most challenging cases to science that I have ever seen."

The caliber of witnesses "is above reproach," said panelist Dr. R. Leo Sprinkle, associate professor of psychology at the University of Wyoming.

Panel member Dr. J. Allen Hynek, chairman of the Dept. of Astronomy at Northwestern University, said: "It's utterly out of the question that they would endanger their careers and pensions by falsifying this encounter."

The search continued, however, and on the second night of the search, one of the carriers was stopped because they wanted to remain in the same area. The bow of the carrrier was pointed south, the temperature was approximately 40 degrees, the sky was completely clear and moonless. There were four destroyers visible on the horizon about ten miles from the carrier.

The witness stated that at about 2100 hours, he was informed by a sailor running by to get a camera that three UFO's were near the carrier. He went up to the flight deck to see the UFO's, but was too late for they had gone. He did, however, witness their "aftereffect." He observed what he termed a "round cloud of luminous dust." The cloud, according to this witness, was "glowing brightly, but not as bright as the stars behind it, which could be seen through it." He added that there was no wind, and that although the cloud was spreading very slowly and getting dimmer, it could still be seen for about thirty minutes after he arrived on the flight deck.

By walking from the aft end of the ship forward, he could estimate the distance from his ship to the cloud at about 150 to 200 yards, and the size of the cloud itself to be approximately 100 feet in diameter. He encountered many of the thousand crewmen who were on the flight deck, and began questioning as many of them as he could before they went back below deck. The witness had provided the following "first person" account of what went on that night in the North Atlantic:

"A few airmen were on deck and saw the UFO's approach. These UFO's came out of the East, very low over the destroyer which was on station there. The craft were in a "V" formation, and they were extremely fast.

"They were over the horizon, then in one or two seconds, they were right next to us. They stopped without seeming to slow down, and they hovered east of us about 150 yards off the port beam. They were some 40 to 50 degrees up from the flight deck surface.

"The crewmen described the three UFO's as 'Saturn types.' They each had rings which were red, and the spheres themselves were orange and glowed very brightly. None of the spheres had any outside projections, no portholes, and they made no sounds whatever.

"The UFO's did not move, and in fact stopped for about 20 to 25 minutes. All three spheres were the same size, about 40 to 50 feet in diameter.

"What was incredible to me was the way in which they left. They did not fly away—they just disappeared. They vanished! I made a point of trying to find witnesses who saw which direction they left in, but everyone I talked with was consistent—the UFO's just winked out. All that remained was the glowing white cloud in the spot where the UFO's had been."

The following morning, everyone on the ship was talking about the event when the officers who were not on watch were called to a meeting. When the witness got off duty and asked a fellow officer about the UFO's, the latter said that as far as he was concerned, no such thing had ever happened, and that there was to be no further discussion.

The witness finished his report by stating that he has spent countless hours researching all available sources for answers to the unexplained disappearance of the helicopter and its crew, but that the incident still remains a mystery.

WHAT'S THE ANSWER?

Why would any advanced civilization bother with technically inferior beings? For many years I have believed that UFO's are reconnaissance aircraft manned by extraterrestrial scientists on surveillance missions. They come from this galaxy or one nearby and have constructed housing and laboratory facilities under our waters.

My theory was reinforced when I read the book "Beyond Earth—Man's Contact with UFO's," (Phillips

Publishing Company, Springfield, Mass., 1974). The authors, Ralph and Judy Blum, relate in detail the case of Patrolman, Herbert Schirmer, 22, of the Ashland, Nebraska police, who was allegedly taken aboard a UFO while on duty the morning of December 3, 1967.

When Schirmer returned to the police station that eventful morning all he could remember was what he logged on the blotter, "Saw a flying saucer at the junction of highways 6 and 63. Believe it or not!"

Officer Schirmer was known to be dependable, honest and truthful, was never known to suffer hallucinations; a man with an impeccable background. When the Condon Committee heard about his report he was interrogated and given a battery of tests. Before they got through with him he was given: the polygraph examination; the Rorschach, Thematic Apperception test; Sentence Completion; Word Association; Wechsler Adult Intelligence Scale; Minnesota Multiphasic Personality Inventory; and he was partially hypnotized by Dr. Leo Sprinkle, Professor of Psychology, the University of Wyoming.

Not until after the Condon investigation was Schirmer aware that he could not account for 20-minutes of his life. A short time after he returned to his patrolman duties, Schirmer was appointed to the position of Police Chief, but was fired within two-months. He said that he believed he was fired because "nobody wants a police chief who sees flying saucers."

Six months after the incident, on June 8, 1968, Schirmer voluntarily underwent regressive hypnosis and disclosed the following details:

While on patrol at 2:30 a.m., Schirmer saw a saucerlike, silvery metallic flying object displaying flashing red lights. He tried to use the cruiser radio but it didn't work, nor did the engine or headlights operate.

After the UFO landed the occupants, who were about 4½ to 5 feet tall, walked over to the cruiser. Schirmer was frightened half out of his wits but couldn't move. He was escorted to the UFO and put in

a large room that was about 26 X 20. The aliens resembled those described by Betty and Barney Hill when they were taken on board another UFO in the White Mountains of New Hampshire in September 1961. The alien's heads were thin and long, skin greyish, small flat noses, thin slit-like mouths and eyes slanted but not the same as Orientals. Schirmer and Betty Hill both agreed that they could not recall, even under regressive hypnosis, whether the beings were communicating by word of mouth or thought transfer.

The craft Commander told Schirmer that he was on board a four-man, observation craft. Their mother ship, a very long, cigar-shaped craft, carried them from their nearby galaxy to Earth and is always standing by as an observation station and headquarters. He disclosed that there was another type of craft, disc-shaped, that operates by remote control and is used for reconnaissance and surveillance missions. All of their flying objects are faster than anything known to Earth man.

During the conversation it was disclosed that the outer space beings have large base facilities under the ocean off the Florida coast, under the ice of one of the polar regions and off the coast of Argentina. Every one of their facilities are either underwater or underground.

They take and use electricity from the world's high tension power lines and get some kind of other power from water. They deliberately operate by pure chance so that the governments of the world cannot determine any patterns. The Commander disclosed that observation of Earth-beings has been going on for a long period of time but they are not hostile and should not be feared.

Naturally nothing was mentioned about their confiscation of ships, boats, planes, and people off the coast of the United States. Publicity was not given to the situation and did not become public knowledge until my book "Limbo of the Lost" was published in June 1969.

Whether you believe the stories of ex-patrolman

Schirmer, Betty and Barney Hill, or Charles Hickson and Calvin Parker, the contactee stories are extremely interesting. But the fact still remains that disappearances in the Limbo of the Lost continually occur, without the slightest warning, without pattern, without logical reason, and with no earthly explanation.

GALAXIES AT A WINK

Stars are not evenly spread throughout the universe but are grouped together in star clouds or star clusters. Over 3,000 of these clusters have been photographed with a billion galaxies.

The most distant galaxies are several billion light-years (12-billion billion miles) from Earth. The nearest of these is the Smaller Magellanic cloud located about 163,000 light-years from Earth; next is the Greater Magellanic cloud located approximately 175,000 light-years away; and the third closest is the spiral galaxy of Andromeda about 9-million million million miles (1,200-million billion miles). At the speed of light it would take 1,500,000 years to make the journey.

The Earth is one planet of trillions and the sun is but one star of more than 200-billion within the Milky Way.

The diameter of the Milky Way is about 95,000 light-years from end to end and about 16,000 light-years thick at the center.

Some astronomers theorize that quasars are galaxies moving away from Earth at about 90-percent the speed of light.

Within two-million light-years of Earth is a group of 17 galaxies which are called the "Local Group."

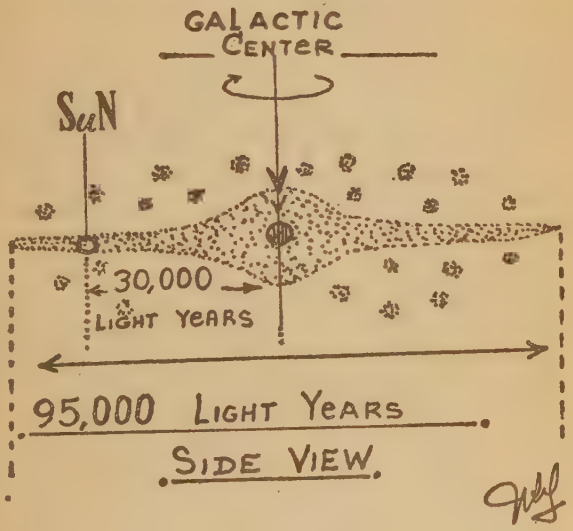
More than 600 galactic or open star clusters of a few dozen to a few hundred stars, rarely a few thousand, are known to be in the central plane of our galaxy. Satellite systems of about 120 globular star clusters, representing thousands or hundreds of thousands of stars are associated with the Milky Way. Their

distance from Earth is anywhere from 7,000 to 175,000 light-years with about 100 settled around the center of the Milky Way. Intergalactic globular star clusters are also known to exist, well beyond the borders of our galaxy, several hundred thousand light-years from Earth.

The whole universe of galaxies is called—METAGALAXY.

Great clusters of hundreds of galaxies are called SUPERGALAXY.

A single galaxy is sometimes called—STELLAR UNIVERSE OR EXTRAGALACTIC NEBULAE.



6

Science Searches the Universe

WHERE DO THEY COME FROM?

Every so often I hear the statement that extraterrestrial beings come from the center of the earth; a civilization unknown to twentieth-century man that evolved within the bowels of this planet and technically surpassed his surface-bound cousins. Although written about in one book and a few insignificant science fiction publications and articles, the odds of that story being true is probably in excess of a million to one.

For a more realistic theory, we have to look to the heavens for our answer to where outer space visitors come from. Aided by education, gigantic telescopes, computers and space technology, scientists have reached far out into the vastness of remote space in an attempt to find evidence of extraterrestrial intelligent life.

We will use the information they have gathered to search every planet and moon within our solar system; next we will visit the nearest star systems within our galaxy and finally other galaxies in the cosmos. Before we set out on our quest, it is necessary to have a basic

understanding of the speed of light and light years as both subjects will be referred to many times.

(Speed of Light). Einstein's theory of relativity tells us it is impossible for any object with mass to accelerate to speeds equal to or greater than the "speed of light,"—186,280 miles per second. Further, the mass of any given object would increase to incalculable dimensions and time would stretch to a point where it would appear to stand still for the occupants of the space ship. For example, traveling at the speed of light, a 5½ earth year journey could equal only one year to the occupants of the craft, or a 40-year space trip could be equal to over 48,000 earth years.

In order for space travelers to be able to endure such long flights one possible answer could be, an induced state similar to suspended animation.

Most scientists state with all certainty that the speed of light will most likely be approached but never surpassed. How can men of science be so absolutely certain, for if the twentieth century has taught man anything, it is "nothing is absolute." The speed of light is a technological matter rather than a biological one and when (not if) the speed of light has been conquered, or at least approached, man will travel to distant planets in orbits around remote solar systems revolving about outlying stars.

(Light Years)... is a measure of distance rather than time and is figured by taking the approximate speed of light, 186,280 miles per second, times sixty seconds, times sixty minutes, times twenty-four hours, times 365 days. It is the distance light travels in one earth year at the speed of light or 5,878,000,000,000 earth miles.

UNIVERSE

The best way to search for life in outer space is by way of an imaginary space ship that willl take us to each of the planets within our solar system, other star systems within the Milky Way, and to distant galaxies

in the universe. I cannot help pondering such questions as: What is the universe? Where did it come from? When did it begin? Who made it? Is earth unique? Is earth man alone in the universe? Do intelligent alien minds on distant planets look to their starry skies pondering similar questions?

Over the past few decades, science discovered many important facts about the universe resulting in an impressive reservoir of information. Although we know more about the heavens than ever before, we still do not know where our extraterrestrial visitors live. In spite of all the latest space technology, astronomers, cosmogonists, and exo-biologists still cannot agree as to when the universe came into being. Guesses range from less than seventeen billion years to more than five billion years. While looking up at the simple beauty of a starry night it is impossible to imagine the awesome size of the universe. To help get a perspective let's use the finding of the 200-inch Hale reflector telescope on Mount Palomar, California. Recently the telescope was fitted with an image intensifier, a television camera and a system that converts optical and infrared images into computer readouts. For certain purposes the telescope's power has been increased to the equivalent of a 1,000-inch telescope.

Scientists have peered out into space several billion light years and have observed more than a billion galaxies. As for estimating the total number of stars in the known visible universe we arrive at more than 1,000,000,000,000,000,000,000. Keep in mind this is just a glimpse of what lies beyond, to be seen, discovered and studied by future scientists. Through man's thirst for truth and knowledge lies the driving force behind the extension of the boundaries of the universe.

Stars and Sun

We marvel at the accomplishments of the astronauts and rightly so, but we also spend our lives on a natural orbiting space station, called "Earth," which revolves around a star named the "sun."

All life on Earth and any life there may be elsewhere in the solar system depends entirely on the blazing nuclear furnace of the sun. Its core temperature is estimated to be 25,000,000 degrees F. and at the corona, in excess of 2,000,000 degrees F. Pouring out from the sun everyday is approximately 400,000,000,000,000,000,000,000 horsepower but only about five ten-billionths of that reaches Earth. It uses hydrogen fuel at a rate of 4.5 million tons a seconds.

The sun is a yellow medium star of such tremendous size that it's beyond comprehension—864,000 miles in diameter—109 times the diameter of Earth—332,000 times the mass of Earth—1,300,000 times the volume of Earth.

Every star in the universe produces its own power and some surely furnish light, heat, and energy to planets rotating around them. Spectroscopic analysis of stars show they are made up mainly of two gases—75 percent hydrogen, 22 percent helium, and traces of other elements.

How Long Do Stars Last?

Of the 50 nearest stars to Earth, 10 percent are brighter, larger, and more massive. Some of the supergiants have 50-times more mass than the sun but their heat is so tremendously high that they burn out and die within 10-million to 20-million years. Astronomers working on the basis that the universe is over 10-billion years old theorize that there have to be untold numbers of giant dead stars in outer space.

A star is not a burning object but rather nuclear and during every rotation loses a small part of its mass. Scientists predict that in fifty billion years our sun will be no more; however, five billion years from now the sun's heat will be so intense that it will bake Mercury, fry Venus, and the surface temperature of Earth will reach the boiling point.

What happens to a star as it begins to die is one of the most exciting attractions the universe has to offer.

(Supernova). As a large star approaches death it

flares up to the brightness of approximately a hundred million suns; this radiance lasts for about twenty days or so. Suddenly it implodes and is followed by an unbelievable explosion that blows it apart and forms a flowing cloud of gas. Astronomers predict that this happens in one galaxy or another every century. More than 100 supernova have been recorded in distant galaxies. A spectacular supernova happened on July 4, 1054 A.D. and the results of that explosion can still be seen in the form of the Crab Nebula. This event actually occurred 5200 B.C. but took 6254 years to reach Earth. Andromeda experienced a supernova in 1185 A.D. and our Milky Way witnessed the galactic show in 1572 A.D.

(Nova). Without warning a star suddenly flares up and within a few days reaches to about 160,000 times its normal brightness. Sometimes it happens to the same star many times over.

(White Dwarf). As stars about the size of our sun begin to cool, they also shrink in size. By the time they reach earth's dimensions they are so dim that only those closest to our planet can be detected. These mini-stars are very common in the universe. As the white dwarfs burn up the last of their nuclear fuel they implode and form a very small object of unbelievable density. An object the size of a child's marble could equal a ton in weight.

(Pulsar of Neutron Star). As a large star becomes a supernova and explodes, some of the matter is compressed to such a density that it almost entirely becomes a tightly packed body of neutrons. A neutron is composed of one electron and one proton and is considered to be the densest form of matter known to twentieth-century science. A neutron star the size of the point of a ball point pen could weight a hundred thousand tons; an object the size of a child's marble could weigh hundreds of millions of tons, and a cubic inch of the material could weigh up to a billion tons.

Think of it this way—if the earth, which has a circumference at the equator of almost 25,000 miles,

was compressed down to a circumference of ten miles, which is the size of an average neutron star, you can well imagine what the density would be.

Regular stars give off a pulsating radio signal once every day. Because of their small size, pulsars (rotating neutron stars) give off pulsating radio signals on the average of one every minute; however, of the scores of pulsars sending radio beams in the direction of earth, some pulsate every 1/30 of a second while others every 3.7 seconds.

(Black Hole in Space Concept). As a giant star implodes it also shrinks and there is no limit to the amount it can compress. An object the size of our sun could collapse down to a radius of a few miles. At this point the gravitational force becomes so strong that only x-ray waves (but nothing else, not even light or radio waves) can escape. Obviously the object itself cannot be seen.

Some scientists say that if they cannot see a black hole and cannot hear it then what proof is there that it even exists? Other scientists point to the fact that in 1970 an earth satellite "Uhuru" was launched with x-ray detecting equipment on board. To date over a hundred black holes have been detected by their telltale x-ray wave lengths, which are ten thousand times as strong as our sun's. Four of the strongest x-ray sources come from the vicinity of Cygnus (the swan); the most powerful has been designated Cyg X-1.

Also offered as proof that black holes are real is the fact that two-star systems are more plentiful than the single-star system and hundreds of invisible companions have been discovered around the known stars.

(Quasars). One of the most puzzling starlike objects in space is the quasar (quasi-stellar radio source). More than a hundred have been studied and yet astronomers still cannot understand the source of their extremely powerful light and radio waves. Quasars generate more light and radio energy than a hundred galaxies the size of the Milky Way. Not only are they believed to represent the most distant stellar objects in the

universe (over ten billion light-years away) but most likely they are also the oldest.

INFORMATION ABOUT SOME OF OUR GALACTIC AND STELLAR NEIGHBORS

Pole Star or Celestial north star is the point at which the heavens seem to revolve. During the past 5,000 years the line of direction of the North Pole has moved from the star Thuban (alpha Draconis) to within one degree of the bright star Polaris (alpha Ursae Minoris) in the constellation of Ursa Minor. Polaris is now the North star and is located about 300 light-years from Earth. In the year 7,500 the brightest star in the constellation Cepheus will mark the north pole.

Vega is a medium star in the constellation Lyra and is located about 26 light-years from Earth. In the year 14,000 this star will replace Polaris to become the north star.

Arcturus is a giant star in the constellation of Bootes and is located about 36 light-years from Earth.

Spica is in the constellation of Virgo and is located about 250 light-years from Earth.

Regulus is in the constellation of Leo and is located 75 light-years from Earth.

Gemini is a constellation of stars located about 47 light-years from Earth. The two brightest stars are Castor and Pollux sometimes called the twin.

The Pleiades is a moving open star cluster in the constellation of Taurus the Bull. The open cluster of a few hundred stars comes as close as 228 light-years and as far away as 456 light-years from Earth.

Andromeda Galaxy (M-31 or NGC 224) is a great spiral galaxy located near the star Beta in the constellation Andromeda. It is the third nearest galaxy to the Milky Way, located about 1,500,000 light-years from Earth. This neighboring galaxy radiates 1,600,000,000 as much light as the sun and is more massive than the Milky Way. Andromeda has two companion galaxies, M32 and NGC 205.

Smaller Magellanic cloud is the nearest galaxy to Earth, approximately 163,000 light-years away. The small irregular galaxy is located in the southern sky and is considered to be a companion or satellite galaxy to the Milky Way.

Celestial South Pole is the point in which the heavens seem to revolve. An imaginary upright bar of the Southern Cross points to the South Pole.

Greater Magellanic cloud is located 176,000 light-years from Earth. Ten-billion stars connect this galaxy by a common, neutral hydrogen cloud which is believed by some astronomers to reach the Milky Way.

Canopus is in the constellation of Carina and is located about 125 light-years from Earth.

Sirius although a medium star is the brightest in the sky. It is located in the constellation of Canis Major about 49.5-trillion miles (8.7 light-years) from Earth. It is twice as hot and 2½ times the diameter of the sun. Sirius has a faint white dwarf star companion that is twice as big and 1,200 times heavier than Earth.

Rigel (Beta Orionis) is a giant star with a surface temperature of approximately 50,000 degrees F. It is located in the constellation of Orion and is about 710 light-years from Earth.

Betalgeuse (Alpha Orionis) is a super giant star with a surface temperature of approximately 5,000 degrees F. The star expands and contracts from 350 to 450 times the size of the sun and is located in the constellation of Orion about 400 light-years from Earth.

Aldebaran is a giant star about 36 times the size of the sun in the constellation of Taurus the Bull and is located about 53 light-years from Earth.

GALAXIES

Compared to the entire stellar spectacular, our sun is but an inconspicuous pin-prick of light lost in the flowing sea of stars we call the galaxy of the Milky Way. Far beyond, the universe abounds with billions of

other such islands, vast accumulations of all sorts of objects like stars, gas, and dust all grouped together.

Galaxies are observed in various shapes; some spiral like the Milky Way and Andromeda, some are elliptical while others have no definite form. The dimensions of these vast starry clusters defy comprehension; an average galaxy contains about ten billion stars, smaller galaxies nearly ten million and several larger galaxies, like our own Milky Way, number several hundred billion star clusters. To travel from one end of the Milky Way to the other at the speed of light (186,280 mps) would take nearly a hundred thousand earth years.

Our galaxy rotates in space like a giant pinwheel of stars, dust and gas, with star-studded limbs spiralling out from its center. Thirty thousand light years from the center, along one of these galactic arms is our insignificant sun with its nine small planets.

EXPLORING THE SOLAR SYSTEM

Our sun is the center of a solar system which extends outward into space for some 3,700,000,000 miles. Within this vast area are nine planets, 32 moons, 30,000 asteroids, including the asteroid belt in orbit between Mars and Jupiter, approximately a hundred billion comets, plus innumerable dust particles, gas molecules, and miscellaneous disassociated atoms. Yet our solar system is considered to be just a small fleck of cosmic dust in an infinitesimal corner of the universe.

To fully discuss all of the details of a solar system would fill several books. Here we shall consider only one aspect, the search for planets in orbit around other star systems in the galaxy. The major problem is in locating companion planets, even those circling the nearest stars, because they are too dim to be seen even through telescopes. Planets are not nearly as bright as stars for they have no light source of their own; they simply shine by reflected light.

SOLAR SYSTEM INTERPLANETARY TIME CHART

SUN PLANET	MEAN DISTANCE FROM EARTH IN MILES	MEAN DISTANCE FROM THE SUN IN MILES	APPROXIMATE TRAVEL TIME FROM EARTH AT 25,000 MILES PER HR.	APPROXIMATE TRAVEL TIME FROM EARTH AT THE SPEED OF LIGHT	DIAMETER IN MILES
SUN	92,950,000	.....	138 days	7 min 59 sec	865,000
MERCURY	56,950,000	36,000,000	95 days	4 min 30 sec	3,010
VENUS	25,700,000	67,250,000	43 days	3 min 20 sec	7,700
EARTH	.....	92,950,000	138 days	7 min 59 sec	7,927
MARS	48,550,000	141,500,000	82 days	4 min 20 sec	4,200
JUPITER	390,550,000	483,500,000	1 yr 9½ mos	35 min 11 sec	88,700
SATURN	794,550,000	887,500,000	3 yrs 7½ mos	1 hr 11 min	75,000
URANUS	1,692,050,000	1,785,000,000	7 yrs 10 mos	2 hrs 30 min	30,000
NEPTUNE	2,702,050,000	2,795,000,000	12 yrs	4 hrs 2 min	27,700
PLUTO	3,582,050,000	3,675,000,000	16 yrs	6 hrs 25 min	3,600

The evidence strongly indicates that about eight percent of the visible stars have planets as large as Jupiter; the number of unobservable stellar companions as small as Mars is believed to be considerably greater. Because of the number of planets revolving around our sun it is theorized to be the cause for its relatively slow rotation. The same situation exists apparently among thousands of millions of stars of small mass within our galaxy.

Even though planetary companions of stars are extremely difficult to detect, six and possibly seven cases have been discovered by the erratic fluctuations of their orbits. In every instance the stars are from among the hundred nearest to earth.

Barnard's famous star falls into this category. It is closer to our sun than any other known star with the exception of the triple system of Alpha, Beta, and Proxima Centauri and for more than twenty years world famous astronomers have photographed its movement and now believe they have proved the star has at least one unseen campanion.

Since it is now widely believed that many stars have formed their own solar systems, it appears more probable that life itself is not unique to only our own small planet.

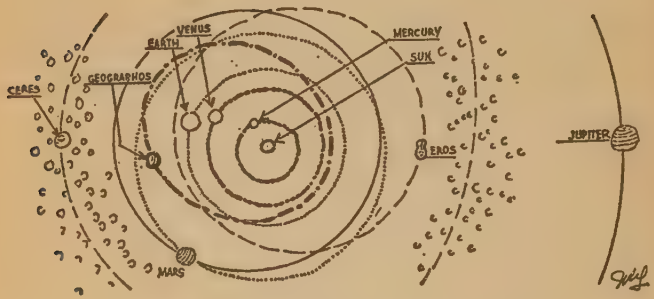
Asteroids—Planetoids

In 1973, Pioneer 11 completed its long journey through a great asteriod belt without incident. Because of the tremendous size of space the odds of a single space probe and just one of the wandering asteroids occupying the same space at the same time were highly unlikely. The 150-million mile wide, spinning asteroid belt, whirls between Mars and Jupiter at speeds in excess of eighteen miles per second.

About sixteen hundred large planetoids have been tracked and cataloged, but of these only about twenty have diameters in excess of a hundred miles and only a few are the size of miniature planets. Another thirty

thousand may be a mile or more in diameter while billions are the size of mountainous chunks of rock, boulders, pebbles, and specks of dust.

The largest is Ceres, a dead ball nearly the size of Texas, one hundred and twenty miles in diameter; Vesta, two hundred and forty miles in diameter; Eros, about the same dimensions as Manhattan Island, seventeen miles in diameter.

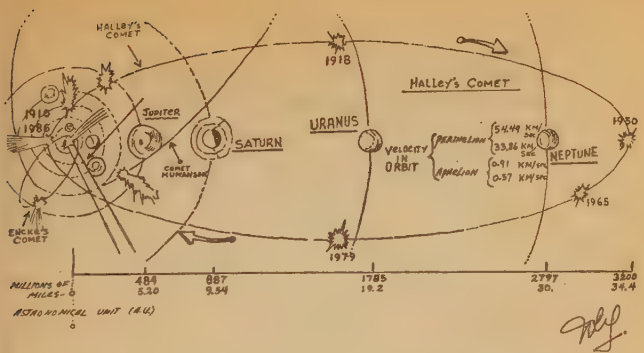


Meteors—Meteoroids—Meteorites

Many scientists believe that most meteors or meteoroids that enter the earth's atmosphere are, along with the debris of comets, pieces from the asteroid belt. Most burn up as they fall through our atmosphere and are called shooting stars; those that hit the earth's surface are called meteorites. The largest meteorite known to reach this planet weighed about sixty tons and is believed to have been an asteroid a mile in diameter. The quarter billion-year old "Vredefort Ring in the Transvaal," has an eroded granite dome some twenty-six miles wide. Scientists estimate that when it struck earth the force was probably equal to a million-megaton bomb.

Comets

Astronomers do not know what comets heads are made of or how they originate but they suspect that



comets are merely dirty snowballs in space—nothing but ice, frozen gases, such as ammonia and water, plus bits of meteoric dust and rock. As they approach our sun, some of the frozen gases are vaporized by solar heat, expanding into an enormous glowing ball with a tail millions of miles long. Driven by solar energy, the tail always streams away from the sun.

Another theory is that the center of a comet is made up of hard matter like meteoric stones and that the tail, that reflects the sunlight, is nothing more than a trail of dust.

Equally difficult to determine is the force that sends them from other systems into ours. If comets are of the type that periodically return we can predict their scheduled orbit. One of the largest known comets that revisits our solar system every seventy-five or seventy-six years is Halley's comet. In 1986 this comet will pass once again through our solar system displaying its 50-million mile long tail.

A JOURNEY INTO SPACE

When we travel on Earth, we usually judge distance in terms of how long it takes to get to a particular

place; the same is true in space. Let's consider an imaginary cosmic trip to the different planets and their moons within our solar system in search of where extraterrestrial life could exist—then beyond.

To begin, we climb into our space vehicle capable of flying at the speed of light. After lift-off we find ourselves hurtling along through space at 186,280 miles per second. To get an idea of what we might expect to find and the type of information to be analyzed, let's pretend to examine earth from the inquiring eyes of our inspecting space probe.

Earth

Earth is a planet 7,918 miles in diameter, six thousand million, million, million tons in weight and the third planet from the sun—93,000,000 miles away. Low cloud cover blocks much of the surface, its atmosphere is made up of 78 percent nitrogen, 21 percent oxygen, and one percent argon, carbon dioxide, and other known gases. The planet has a 90 percent carbon dioxide production level; however, only a fraction of a percent is found in the atmosphere. Most of the carbon dioxide is dissolved into the oceans that cover 71 percent of its surface. Vast vegetation such as trees and plants absorb large amounts of carbon dioxide from the atmosphere which is used in a photosynthesis process where oxygen is given off as a waste product. No appreciable amount of hydrogen or helium can be found.

The planet seems to be in constant weather change with high winds recorded at times. The land masses vary from flat desert, rough craggy hills, forests and swamps. There is some sign of volcanic activity indicating the planet must be extremely hot under the surface. In some sections, seasons are noted by the change of colors from green, brown to white. Extreme temperature variations have been observed from a cold of minus 127 degrees F. at the poles to a hot plus 135 degrees F. near the equator.

Moon

Earth has only one natural moon, about 2,160 miles in diameter, one fourth the size of its mother planet. The satellite is not a completely dead body as possible water vapor has been detected, perhaps from geysers east of the Ocean of Storms. The moon's atmosphere is a near perfect vacuum where there is no weather or sound; temperatures range from plus 260 degrees F. to minus 185 degrees F. The surface is made up of smooth mountains and rolling hills, dead volcanic and meteoric craters and flat plains.

The information gathered by the imaginary space probe would appear to be quite clear and yet many different conclusions could be drawn. But the big question would still be; is there intelligent life on Earth or not?

Following a similar scientific survey we will go from planet to planet in search of intelligent extraterrestrial life. We will examine the facts of what we now know about each of the eight other planets of our solar system to prove that life on Earth is part of a tremendous universal plan and not just simply the result of a rare disease that attacked only Earth.

Mercury

A planet about a third the size of Earth, 3,010 miles in diameter and the innermost member of our solar system, Mercury orbits the sun at an average distance of 36,000,000 miles. To travel from earth, 57,000,000 miles away at the speed of light, takes four minutes, thirty seconds. Prior to the Mariner 10 space probe on March 29, 1974, astronomers could only see one face of a hazy disk because as it rotated it was hidden from earthbound telescopic view by the harsh glare of the sun. Close-up photographs taken from only 416 miles over the Mercurian surface show areas as small as 100 feet wide. We see a desolate terrain, rougher and more pocked with craters than our moon; covered with long ranges of small hills, cliffs, and what appear to be long, twisting, dry streams, and river beds. There

is a possibility that some of the surface is composed of radioactive material, that some volcanoes are still active and that at one time free-flowing water existed.

Mercury has a weak, wispy atmosphere about 0.1 percent that of Earth, primarily made up of neon, argon, helium, and hydrogen. The thin atmosphere coupled with an insignificant magnetic field about one percent as strong as Earth's, leaves scientists baffled as to why all the gases do not simply escape out into space. Mercury's magnetic field is perhaps 50 percent iron as compared with Earth's churning, molten core that is 16 percent iron by volume.

It is difficult to imagine any form of life surviving on Mercury under temperature extremes of plus 1000 degrees F. to minus 300 degrees F., or being able to escape the unshielded, penetrating, destructive bombardment of the sun's deadly radiation striking a totally forbidding, bleak surface at 400-miles per second.

Venus

Slightly smaller than Earth, Venus is 7,700 miles in diameter and the second planet from the sun, an average distance of 67,000,000 miles. To travel to our closest neighbor, 36,000,000 miles away at the speed of light, takes three minutes, twenty-three seconds. With the exception of a 4,500-mile by 1,250-mile cloudless area named the "Venusian Eye," the surface is completely hidden under high swirling jet streams of cloud layers moving at speeds of four hundred miles an hour at the poles and two hundred miles an hour at the equator. The terrain most probably will never be seen because the visibility on the surface would be like being in the middle of a blinding dust storm or a smog hundreds of times thicker than anything experienced on earth. Venus gets twice the solar heat and energy that falls on earth. A thirty-five mile thick cloud-cover holds the ultra heat to the surface, like a hot-house resulting in temperatures reaching plus 900 degrees F. High winds distribute the hot atmosphere almost equally

over the planet's surface. Earth's broken cloud-cover rarely reaches even a ten-mile thickness.

Radar scanning shows us a dust-covered smooth surface with some rough mountainous regions. Scientists of the Jet Propulsion Laboratories recently announced another puzzle. Venus has many rough and high craters. This was not expected as Venus has a heavy atmosphere which means storms and weathering. In millions of years, these craters should have been worn down, but they are not.

Several United States and Russian space probes revealed an atmosphere crusted by carbon monoxide and made up of ninety percent carbon dioxide, 0.4 to one percent oxygen and 1.6 percent water vapor; one thousandth the amount found in Earth's atmosphere.

For life to exist under the conditions found on Venus would require adaptations beyond logic or imagination. Life would have to survive the continuous 400-mile per second solar winds given off by the sun, overcome high unbearable furnace-like temperatures that could melt lead or tin, resist pressure hundreds of times that of Earth and survive without a need for a great deal of water.

Mars

A planet about 60 percent the size of Earth, 4,200 miles in diameter, Mars is the fourth planet from the sun, an average distance of 142,000,000 miles. To travel from Earth, 49,000,000 miles away at the speed of light, takes four minutes, thirty seconds. One hundred Earth pounds equals forty-two pounds on Mars; the atmosphere is made up of at least ninety percent carbon dioxide with small amounts of carbon monoxide, oxygen and hydrogen; no traces of nitrogen, ammonia or methane have been detected. From a scientific point of view, large percentages of carbon dioxide indicate that great amounts of water are also being constantly produced.

The Martian surface is moon-like with pock-

marked craters, unusual barren, smooth and flat rock formations, volcanoes and empty featureless arid plains. Color photographs of the surface show large white sections at both poles that shrink and expand with the seasons. Many scientists interpret these areas as frozen carbon dioxide mixed with unknown amounts of water ice that could possibly have been trapped for thousands or even millions of years. The exact depth of the ice is not known; however, it is thought to be many miles. Thick layers of permafrost are believed to exist just under the surface of most of the rest of the planet. The dark areas have been interpreted as probable vegetation such as lichens and mosses, that change in size and shape as the atmospheric conditions become warmer and wetter during the Martian spring and summer season. Fog and small amounts of water vapor have also been detected near the equator.

Mars of today is in an ice age but it is internally alive, more like Earth than our moon. Nearly half of the surface has extensive active volcanoes; in fact the highest point on Mars is a volcano three times the size of Mount Everest and covers some three hundred miles. Afternoon clouds appear around the high volcanoes leading to the theory that they may be formed by water vapor coming from the volcanoes. There are no canals or surface running water on Mars; however the planet is covered with hundreds of ancient complex dry river channels that lead into giant arid dusty river basins apparently produced by one time free-running water.

The minerals in the surface dust of Mars are very close to those of Earth. Winds up to three hundred miles per hour whip the dust up to heights of thirty-five miles. Canyons, not cut by water, part the Martian surface for thousands of miles; the greatest is a continuous rift 2,300 miles long and at some points up to 150 miles wide. Only half as much solar energy falls on Mars as does on Earth yet the surface temperatures range from a maximum of plus 80 degrees F. during

the day at the equator to a minimum of minus 190 degrees F. at the southern polar area. The air is so ultrathin that to equal it, a climb to the height of twenty earth miles above sea level would be necessary.

Due to the recent findings uncovered by Mariner IX, many scientists now believe in the possibility there is or was life on Mars. They believe that at one time Mars had a denser atmosphere, with higher temperatures and an abundance of free-running water. Whether water ever existed on Mars is not important because recent experiments disclosed that it is not essential to life nor to every living cell.

Speculation as to the existence of life on Mars resulted in intensive studies of its atmosphere and surface conditions. The Jet Propulsion Laboratory in California announced evidence that primitive forms of life could easily have developed on Mars millions of years ago. The laboratory created an environment similar to Mars using fine sterilized soil, powdered glass, 97 percent carbon dioxide, a small amount of carbon monoxide and water vapor. The entire experimental area was bathed with ultraviolet rays and within three days, three basic compounds known to be responsible for the origin of biological life on earth, formaldehyde, acetaldehyde, and glycolic acid, were artificially created. This experiment reasonably proved that simple forms of life could actually exist on Mars. Following the same logic why not the existence of intelligent life or even Homo spaiens on Mars?

Mars has two very small satellites, Deimos, 6 to 10 miles in diameter and Phobos a battered cold, dead chunk of rock 17 miles long and 12 miles wide. The gravity on Phobos is so low that if you stood on the surface and threw a rock parallel to the ground it would make a complete orbit in less than two hours. There is no need for any further discussion about the two moons of Mars, for there is no chance of life being found there.

Several popular theories, some by scientists, have been offered to explain what happened to the original

forms of Martian life. One theory is that in the early stages of Martian development, possibly millions, maybe billions of years ago, there was a favorable environment for the existence of life. Conditions gradually worsened and as the environment became hostile, life adapted, evolved, and survived. The science fiction theory presumes that possibly the survivors went underground. This cannot of course be substantiated at present by telescopes or space flybys. The under-the-surface theory is based on the premise that life needs water and water might be plentiful under the Martian surface. Ultraviolet radiation bombardment from the sun would be dangerous to unshielded creatures; again underground facilities would be the answer. Extremely cold temperatures could be overcome by channeling hot water from active volcanoes. If a highly intelligent civilization lives under the surface of Mars, the artificial production of oxygen and other necessities of life could be produced. Fish from underground streams, a vast array of organisms, lichens and mosses among other vegetation could be their source of food.

Another theory for the survival of Martian life is hibernation. Based on the belief that Mars went from a warm, wet to a cold, dry setting there might be life, lying in a dormant state just waiting for the coming of the Martian spring.

A third theory that again borders on science fiction is the possibility that large organisms, big enough to be photographed close up, are living on the surface of Mars and that these creatures adapted equally to the extreme conditions. As water gradually became scarce on the surface they tapped underground springs. On Earth we know that some forms of life do not need oxygen to survive. For example, tetanus bacteria will not survive in an atmosphere of oxygen. Therefore, it is not impossible for living creatures to adapt to a low oxygen environment. Deadly radiation from the sun could be shielded by artificial means or natural adaptations to the pigment of the skin developed to block out the harmful rays.

No matter what theory you believe the search for life on Mars will continue in 1976 when the Viking lander touches down on the surface of the red planet. Theories will either be substantiated or crushed out of existence forever as Viking analyses the Martian surface for microscopic life by remote-control diggers designed to pick up soil samples for scientific analysis. Microbes cover the earth's surface except for the very cold arctic regions therefore, it is logical to assume that if life exists or ever existed on Mars the Viking lander will, hopefully, unlock the secrets if the right landing site has been selected. Watchful camera eyes will scan the Martian surface to see any large walking life that might happen by the lander.

Maybe all three theories are incorrect; we will just have to wait and see. Nothing found by Mariner IX eliminates the possibility of life; in fact the evidence increases the probabilities. There is little doubt that conditions are favorable for life of a high order.

Jupiter

Jupiter is the largest planet in our solar system, as big as 1,300 Earths, 88,700 miles in diameter and the fifth planet from the sun, an average distance of 484,000,000 miles. It receives only one twenty-seventh the solar radiation that falls on Earth but radiates two to three times more heat than it receives. To travel from Earth, 391,000,000 miles away, at the speed of light, takes about 35 minutes, 11 seconds.

A New Look at Jupiter

Man's first close-up look at Jupiter began at 8:40 p.m. (EST), March 2, 1972 as the Atlas-Centaur launch vehicle successfully shot Pioneer F. (becoming Pioneer 10 after launch) into the sky over Cape Kennedy, Florida. Twenty-one months later, on December 5, 1973, Pioneer 10 flew within 81,000 miles of the Jovian surface making measurements and taking photographs.

Much of the new information contradicted many previous theories on the nature of Jupiter. In some cases, the consensus of opionion among Pioneer experimenters and other scientists, verified pre-existing theories about the giant planet. In other cases, the findings were completely new. Dr. John Wolfe, Pioneer Project Scientist at NASA's Ames Research Center, Mountain View, California said, that Pioneer 10's visit to the great planet provided the first firm ideas of what Jupiter is like.

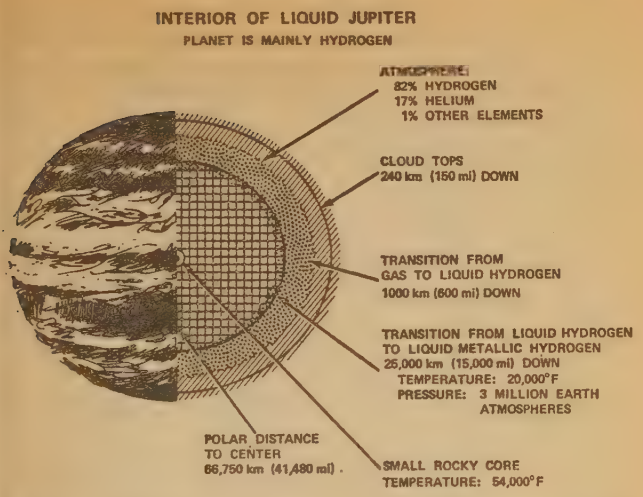
Based on information returned by Pioneer 10, Jupiter now seems to have many unusual characteristics:

• The colossal planet by itself contains more than two-thirds of all the planetary material in our solar system.

• Gravity-sensing measurements confirm that the brightly-banded planet is in "hydrostatic equilibrium" in other words, a huge flattened, fast-spinning ball of liquid hydrogen, without any detectable rigid crust or solid areas. Theoreticians believe that thousands of miles below the heavily clouded atmosphere, at Jupiter's center, there may be a small rocky core, perhaps containing some iron.

• Jupiter's turbulent interior is much too hot to solidify, even with its enormous internal pressures of millions of earth atmospheres. A Jovian temperature profile was calculated by Dr. William B. Hubbard, University of Arizona, using measurements obtained by the gravity-sensing experiment of Dr. John Anderson, NASA's Jet Propulsion Laboratory, Pasadena, California. The experiment used the Pioneer 10 spacecraft itself as a sensor.

The best explanation for Jupiter's tremendous internal temperature is that it is primordial heat left over from the time Jupiter and the rest of the solar system was formed, an estimated 450,000,000,000 years ago. An alternative explanation by some scientists is that it is energy released by the chemical separation of hydrogen and helium, a process believed to be currently un-



derway somewhere near the center of the big, bizarre planet.

• Jupiter is the only celestial body in our solar system besides the Sun that in itself is a source of high-energy particle radiation.

• Total energy in the Jovian magnetic field is 400,000,000 times that of Earth's and it sometimes reaches out millions of miles from its cloud tops. The poles of Jupiter's magnetic field are reversed from Earth's; a Jovian compass would point south. Dr. Edward Smith, Jet Propulsion Laboratory, magnetic field experimenter said that the giant planet's field, like the Earth's, is believed to result from the "dynamo effect" of the planet in which circular currents (eddies) within the liquid interior generate electric currents, and hence magnetic fields. Scientists believe that only a planet with a tremendously active interior could produce a magnetic field as far off center as Jupiter's.

• On January 31, 1958, "Explorer 1" gave to science the first indication that the world was surrounded by regions containing charged particles of high en-

ergy. These regions were named the "Van Allen Radiation Belts," after Dr. James A. Van Allen of the State University of Iowa, the man who headed the team of scientists that carried on the experiments. After the findings of Explorer 3 and 4, Pioneer 3, and Soviet Sputnik 3, the world of science was told that one continuous radiation belt extended out from Earth to a distance of approximately 32,000 to 40,000 miles. These belts protected Earth against the million-mile-an-hour (200 to 500 miles-per-second) solar winds. The charged particles of the Van Allen Belts are held by Earth's magnetic field in a region called the "magnetosphere."

Jupiter's radiation belts have the highest intensity ever observed by space measurements. Dr. Van Allen is still on the job as he is one of four energetic particle experimenters analyzing the information provided by Pioneer 10. He said that the total energy of particles in Jupiter's belts is many millions of times the total energy of those in Earth's belts. However, these same belts of intense particle radiation also pose the greatest threat to spacecraft orbiting or flying too close to Jupiter. The big, brightly-banded planet's fast-spinning outer radiation belts, says Dr. Van Allen, have some analogy to pulsars (rapidly rotating, super-dense neutron stars). Both throw out particles, and a study of Jupiter's belts could provide some clues to the nature of pulsars.

Solar winds cannot directly penetrate Jupiter's surface because it is protected by a huge, 9-million-mile magnetosphere. The colossal planet has a bow shock wave produced, when the solar winds rushing out from the Sun strike Jupiter's magnetosphere and flow around it. If the magnetosphere could be seen from Earth, it would occupy two degrees of the sky compared with only half a degree occupied by the Sun.

• Jupiter's atmosphere is a 600 mile deep outer layer consisting primarily of 84 percent hydrogen, 18 percent helium, with about 1 percent methane, ammonia and other elements. As of this writing, no water has been detected. An interesting coincidence is that the

chemical formula of the Sun is similar to the ratio of elements of Jupiter.

• Jupiter's weather is unknown except that the atmospheric circulation pattern is far different from Earth's. For example, the familiar circular, high and low pressure systems of Earth are stretched completely around the big planet. The "weather stretching" pattern is probably caused by Jupiter's 22,000 mile-per-hour rotation speed and accounts for the semi-permanent, alternating brown-red and grey-white cloud bands.

Theoretical astronomers believe that Jupiter is made up of a kind of four-decker sandwich: ammonia "ice" crystals; red-brown clouds (ammonia hydrosulfide crystals); water ice-crystals, and liquid water droplets containing ammonia in solution. These scientists say that there may be lightning, storm activity, and other-phenomena on Jupiter because of its large amount of energy and violently circulating atmosphere.

• Jupiter's mysterious Great Red Spot is probably a 25,000-mile-long, gigantic storm of whirling clouds, towering some 5-miles above the surrounding cloud deck. It is believed by some scientists that the storm has been raging for at least 700 years.

A second "red spot", about a third the size of the Great Red Spot can be seen in the Pioneer 10 pictures. Dr. Andrew Ingersoll, California Institute of Technology said that the second red spot lends support to the idea that "red spots" are occasional meteorological phenomena on Jupiter.

• The most startling discovery came when Pioneer 10 turned its ultraviolet scanners away from the planet's surface to look out toward Jupiter's 12 satellites.

Io (I), 3,340 miles in diameter, about the size of our moon is the closest large satellite to the giant planet. It is 23 percent heavier than previously believed with its own changing atmosphere. Dr. Arvydal Kliore, Jet Propulsion Laboratory, Pioneer radio occultation experimenter said that sodium, hydrogen, and nitrogen

are present on Io and that it is the smallest known celestial body with an atmosphere. When Io emerges from Jupiter's shadow, it is white and the most reflective object in our solar system; within ten minutes it begins to return to its pronounced orange color. Apparently during its 21 hours in the freezing Jovian night, methane snowflakes form from Io's atmosphere, which then evaporates with return to sunlight. An entirely new and unexpected phenomenon is, that Io is embedded in a hydrogen cloud.

Europa (II), a fifth the size of Earth, like Io has a density similar to that of our moon, primarily rocky. Dr. James Pollack of NASA's Ames Research Center, believes that a hot primordial Jupiter radiated enough heat to prevent water vapor from condensing into ice during formation of Io and Europa.

Ganymede (III), the largest of Jupiter's dozen moons is bigger than Mercury and like Io and Europa also has an atmosphere. Pioneer 10 pictures seem to show a south polar mare and another central mare 480 miles in diameter, highlands, various large meteorite craters, and a bright north polar region. The surface somewhat resembles our Moon and Mars but it is suspected that it is not solid but more like a mixture of water-ice and rock.

Io, Europa, and Ganymede apparently carve out troughs in the colossal planet's radiation belts. This "taking-out-of-circulation" of high-energy particles has a reducing effect on the total radiation near Jupiter by from 10 to 100 times. The total radiation measured by Pioneer 10 was about 100 times the lethal dose for humans, and near the limit of radiation tolerance for spacecraft systems. Needless to say that the three closest planet-sized moons of Jupiter are wrapped in an intense radiation belt making manned landings impossible without a very advanced technology to protect them.

Callisto (IV), larger than our Moon is in orbit just outside the region of intense radiation making it

somewhat more feasible for a manned landing. Like the three other close moons, Callisto's average surface temperature on the sunlit side is approximately minus 230 degrees F.

The remaining eight "ice" moons have not been named but just numbered V to XII because they are too small and faint to be of any real significance.

The evaluation of the latest information about Jupiter leads me to believe that it is certain that no life form could exist in such a hot, hostile environment. In the future, as more specialized spacecraft pass or orbit Jupiter and her moons, more will be learned.

On December 3, 1974, Pioneer 11 will pass within 29,000 miles of the Jovian surface.

In March 1976, Pioneer 10 will take a second look at Jupiter but this time from a totally different position, 440-million miles away.

It may be possible that life will be discovered on one or more of the four planet-sized moons of Jupiter, but only time and effort will tell.

Saturn

The second largest of the planets in the solar system in Saturn, 9 times the size of Earth, 72,000 miles in diameter and the 6th planet from the sun, an average distance of 887,000,000 miles. Only a hundredth of the light and warmth of the sun that falls on Earth can be detected on Saturn, which leads to the belief that the temperature on the surface is down around minus 238 degrees F. To travel from Earth, 794,000,000 miles away, at the speed of light, takes about one hour, eleven minutes. The gravitational pull on Saturn is nearly the same as earth and its atmosphere is similar to Jupiter except there is more methane and less ammonia. The unusual attraction of Saturn is the system of rings that encircle the planet. The Lunar and Planetary Laboratory at the University of Arizona in 1969 announced that the spectral analysis of the rings shows

them to be largely formed of ammonia ice, chunks of water ice, or ice-coated bits of rock, each in its own orbit. The rings are not solid as stars have been seen through them.

Ten satellites orbit Saturn; Titan, the largest, with a diameter of 3,500 miles, larger than Mercury, is not only brighter but is the only satellite with its own atmosphere. The smallest moon is two hundred miles in diameter. The nine other satellites have been given poetic names: Janus, Mimas, Enceladus, Tethys, Dione, Rhea, Hyperion, Iapetus, and Phoebe.

Because of the distance from the sun, some scientists assume that life could not possibly exist on Saturn. Yet at the same time these men of science agree they know very little about the surface because of a 16, 000-mile deep atmosphere. Remember if it were not for atmosphere even the earth would freeze. They further state that between the dense cover atmosphere and the solid core of the planet is a layer of ice, and like Jupiter, Saturn is very cold with no evidence of free oxygen. However, ammonia, methane, hydrogen, and helium are present. Allow me to toss a monkey wrench theory into the works in the form of a condition similar to Earth's Gulf stream. We know that on Earth this great moving body of warm water gives France, the Low Countries, and the British Isles a comparatively temperate climate, despite the fact that they lie in latitudes comparable to those of frigid Newfoundland and Labrador. If only for the sake of theory, we imagine Saturn having a similar warming system as our Gulf Stream then this added hypothesis could make a definite change in the "no life possible" theory.

The existence of life on Saturn or on one or more of its moons cannot be chalked off if only because so very little is known about their actual surfaces, temperatures and atmosphere.

Uranus

A planet about four times the size of Earth, is 30, 000 miles in diameter and the 7th planet from the sun,

an average distance of 1,787,000,000 miles away. Uranus lies in the bitter cold and unrelieved darkness of the outer solar system with temperatures believed to be around minus 270 degrees F. To travel from Earth, 1,694,000,000 miles, at the speed of light, takes about two hours, thirty minutes. Spectroscopic analysis reveals hydrogen and methane in its atmosphere, but no sign of ammonia, which could simply mean there is a frozen ocean of ammonia. Uranus has five known satellites; Titania is about half the size of our moon; the others, Ariel, Umbriel, Oberon, and Miranda, are much too small to even speculate about their actual size or atmosphere.

Does life exist on Uranus? We know so very little about the planet we can hardly even venture a good guess. But please remember, astronomers, physicists, and exobiologists have found that the materials and substances of which the universe is made seem to be the same everywhere and subject to the same laws, whether studied as minute particles or on distant planets and stars.

Neptune

The fourth largest of the planets in the solar system is Neptune, three and a half times the size of Earth, 27,700 miles in diameter and the 8th planet from the sun, an average distance of 2,797,000,000 miles. This twin of Uranus has an estimated temperature of minus 328 degrees F. To travel from Earth, 2,704,000,000 miles away, at the speed of light, takes about four hours, two minutes. The bulk of Neptune's atmosphere is hydrogen, helium, and methane, plus high proportions of water or ammonia ices believed to be the same composition as comets. Neptune has only two satellites, Triton, about the size of Earth's moon, and Nereid, about two hundred miles in diameter. Does life exist on Neptune? Because of the great distance from Earth, your guess is as good as anyone's.

Pluto

The smallest and outermost member of our solar system, Pluto is about half the size of Earth, 3,100 to 3,600 miles in diameter and the 9th planet from the sun, an average distance of 3,675,000,000 miles. Pluto receives only a thousandth of the solar energy that falls on the Earth's surface. Almost nothing is really known about this mysterious planet except an estimated size and orbit and that it probably resembles the inner planets in composition. Pluto has nothing in common with its giant galactic neighbors. It must be exceedingly cold as temperatures most probably never rise above minus 350 degrees F.; almost all gases except hydrogen and helium would be liquified at such low temperatures. It is highly unlikely that Pluto has any appreciable atmosphere. The odds of any form of life existing on such a small, hostile planet so far from the life-giving sun seem rather remote.

A Tenth Planet

The list of planets in our solar system should end with Pluto, but a few astronomers insist there is still another planet to be discovered with a predictable path around the sun. Only time will tell.

Conclusion

Planets, satellites, asteroids, meteorites, and comets—the survey of our solar system is complete. As far as our knowledge goes advanced intelligent forms of life could very easily exist on several of the planets and their satellites within our solar system.

We can carry on the search for where they come from as far as eight stars within a ten-year travel time of Earth at the speed of light. The nearest triple star system to our sun is that of Alpha, Beta and Proxima Centauri, about 25-trillion miles from Earth. At the speed of light it would take about 4 years, 3 months to reach the multiple star system. Other galaxies can be ruled out for the time being as only five galaxies are

within 2,000,000 light years of our solar system. The three nearest galaxies are:

- Smaller Magellanic cloud is the nearest galaxy to Earth, located approximately 163,000 light years away.
- Greater Magellanic cloud is located 176,000 light years from Earth.
- Andromeda Galaxy, perhaps the best known, is located about a million and a half light years away or nine million, million, million miles from Earth.

The new frontier in outer space science is the search for intelligent life outside of Earth. One or more of the planets within our solar system or within the solar system of one of our nearest star systems is probably the farthest edge of that frontier. For many scientists it is too great a jump in imagination to be taken seriously; that is for the present!

A Squint at the Sun

The sun is the closest star to Earth, a distance of approximately 93,000,000 miles. The entire solar system rotates around the medium yellow star that uses up hydrogen fuel at a rate of 4.5 million tons a second and gives off 400,000,000,000,000,000,000,000 horse power daily. According to the National Geographic Society, only one two-billionth of the sun's radiant energy reaches Earth. Yet in three days as much solar energy falls on Earth as would be produced if all the planet's coal, oil, and wood were burned at once.

It is about 866,400 miles in diameter and would take 109 Earths to cover it—in mass it would take 332,000 Earths to equal it—in volume it would take 1,300,000 Earths to fill it.

Sunspots are dark areas on the face of the sun. The size of the sunspots vary from 200 miles in diameter to 100,000 miles long and show up at several sections of the sun at the same time. Astronomers do not know what causes the spots but know that their effect is felt on Earth in the form of disturbances to short-wave

radio communications, auroral activity and fluctuations in Earth's magnetic field.

Stars at a Twinkle

Hydrogen gas makes up 3 to 4 percent of the total mass in the Milky Way filling the space between the stars. Astronomers believe that there are more than 200-billion billion (200,000,000,000,000,000,000) stars in the universe.

There is no estimate as to the possible distance of the furthest star, however it is suspected that it may be in a quasar some 10-trillion light-years away or in galaxies billions of light-years away.

After 10-years of research, the high energy of quasars and the beeping radio waves from stars called pulsars are still a mystery to astronomers.

A black hole is a star that cannot be seen because it is a super dense neutron star with a gravitation force so great that all matter, including light, is sucked in. Only X-rays can escape.

The largest star is Epsilon Aurigae—a billion miles in diameter—1,250 times the diameter of the sun—2,000 times farther away than the sun.

The smallest star is LP 768,500, a white dwarf about 900 miles in diameter with a density of about 18-million pounds per cubic inch.

The farthest star in the Milky Way is probably within the globular star cluster called "the Hercules cluster" about 34,000 light-years away.

The nearest star, other than our sun, is Proxima Centauri, which is a giant companion of the bright star Alpha Centauri and the not so bright Beta Centauri. All three stars are about 25-trillion miles away (25 million million miles—4.3 light-years).

Outside the solar system, distances are so great that they are measured in units called light-years. A light-year is the distance light travels in one year going at 186,282 miles per second. (Nearly 6 million million miles, or to be exact, 5.88 trillion miles—5,880,000,000,000).

THIRTY-SIX NEAREST STARS

STAR	DISTANCE IN LIGHT YEARS
PROXIMA CENTAURI	2.28
ALPHA CENTAURI	4.34
BETA CENTAURI	4.30
BARNARD'S STAR = +4° 3561	6.0
WOLF 359	7.7
LALANDE 21185 BD +36° 2147	8.2
LUYTEN 726.8	8.70
SIRIUS A — (brightest star)	8.70
SIRUS B	8.70
ROSS 154	9.3
ROSS 248	10.3
EPSILON ERIDANI	10.8
ROSS 128	10.9
LUYTEN 789-6 — (2nd faintest star)	11.0
61 CYGNI A	11.1
61 CYGNI B	11.2
PROCYON A — (8th brightest star)	11.3
PROCYON B	11.3
EPSILON INDI	11.4
EPSILON 2398 A = BD +50° 1915	11.5
EPSILON 2398 B	11.6
GROOMBRIDGE 34 A	11.7
GROOMBRIDGE 34 B	11.7
CETI	11.8
LACAILLE 9352	11.9
LUYTEN BD +5° 1668	12.4
CD —36° 15693	11.9
CD —39° 14192	12.8
KRUGER 60 — (size of the sun)	12.9
KAPTEYN'S STAR	13.0
ROSS 614	13.1
BD —12° 4523	13.4
VAN MAANEN'S STAR (5,200 m.i.d.)	13.8
WOLF 424	14.5
BD +50° 1725	14.7
CD —37° 15492	14.9

NATURAL SATELLITES OF OUR SOLAR SYSTEM

SATELLITE	MEAN DISTANCE IN MILES FROM PLANET	DIAMETER IN MILES	NAME MOTHER PLANET
MOON	238,857	2,160	EARTH
PHOBOS (fear)	5,825	10?	MARS
DEIMOS (panic)	14,580	5?	
(V)	112,000	150?	JUPITER
IO (I)	261,900	2,220	
EUROPA (II)	416,600	1,790	
GANYMEDE (III)	664,600	3,120	
CALLISTO (IV)	1,169,000	2,770	
(VI)	7,130,000	100?	
(X)	7,200,000	15?	
(VII)	7,290,000	35?	
(XII)	13,000,000	14?	
(XI)	14,300,000	19?	
(VIII)	14,600,000	20?	
(IX)	14,700,000	17?	
JANUS	51,900	190?	SATURN
MIMAS	115,200	300?	
ENCELADUS	147,700	350?	
TETHYS	182,900	630	
DIONE	234,300	450?	
RHEA	327,100	810	
TITAN	758,400	2,990	
HYPERION	918,700	350?	
IAPETUS	2,210,000	750?	
PHOEBE	8,040,000	200?	
MIRANDA	80,700	175?	URANUS
ARIEL	119,100	600?	
UMBRIEL	165,900	400?	
TITANIA	272,100	950?	
OBERONE	363,900	700?	
TRITON	219,500	1,080?	NEPTUNE
NEREID	3,450,000	200?	

7

Extraterrestrial Life

DOES OTHER LIFE REALLY EXIST?

In the past few years many astronomers and other scientists have changed some of their preconceived ideas and now believe that elsewhere in the universe intelligent life must exist. The evidence shows that life happened fast on earth suggesting that it is not necessarily an uncommon event and that life most likely happened on other planets as well; maybe a lot earlier.

From a strictly scientific standpoint we do not even know how life started on earth, so how can anyone exclude the existence of life on other planets or their satellites. Scientific experimentation using the chemical ingredients discovered on other planets leads to the theory that life could survive and is therefore not unique to just Earth.

At the University of Chicago in 1953 an experiment was conducted whereby the ingredients of Earth's and Jupiter's atmosphere, methane, ammonia, hydrogen, and water, were given electrical charges equivalent to a bolt of lightning and ultraviolet radiation equal to that received from the sun. Complex organic molecules, glycine, alanine, and other amino acids from which

proteins are formed in living matter actually developed. Using the ingredients of Jupiter, the building blocks of living cells were artificially created.

From a religious point of view, some say that wherever there is a likely planet, God could have created life upon it, life that resembles earth man.

The theory that we are alone in the incomprehensibly vast reaches of inter-galactic space defies all logic. Some scientists admit that there must be other stars like our sun, with similar families of planets, but for life to exist would depend upon a special combination of conditions. They say that the other planets must not be too hot or too cold; they need an atmosphere that does not contain large amounts of poisonous gas; oxygen and water have to be present and a shield such as ozone is necessary to protect life against the sun's dangerous radiation. These other heavenly bodies would have to be just about the size of Earth; if smaller, the atmosphere would not be contained and if larger the poisonous gases would not be able to escape into outer space.

Ability to Adapt

Some of the newer generation of scientific thinkers say that others who believe in these concepts are not taking into consideration living creatures' ability to adapt and insulate against different environments. The limits of the adaptability of life is unknown, the only certainty is that life can and does adjust to the most adverse conditions imaginable. I offer the following factual examples.

According to the rules of aviation medicine, man generally develops hypoxia (oxygen hunger) at altitudes in excess of 13,000 feet above sea level with the ensuing consequence of loss of attention, judgement and ultimate unconsciousness. However, some mountaineers adapted well to high altitudes as they live, work and play at 25,000 feet above sea level, twice the considered safe height.

Basic high school science tells us that all earth life

is primarily based on oxygen, carbon, and water. Yet we know what some organisms like the common jellyfish, consist of mainly water; cacti survive in dry arid regions; certain bacteria partly replace carbon with sulphur and live in boiling sulphuric acid while others are salt-living bacteria.

The deep dark regions of the oceans contain almost no plant life, but the inhabitants such as crabs, lobsters and crayfish still survive by feeding on dead organisms that sink from the surface.

Life Without Water

We have also been taught that life cannot exist without water. Modern science has sustained certain life-forms by replacing water with liquid ammonia. On planets where temperatures are less than minus 32 degrees F., and above plus 110 degrees F., liquid ammonia could be a natural water substitute. Methane retains its liquid state down to minus 300 degrees F., and could also replace water if necessary.

Everday new areas in organic chemistry are being uncovered and perhaps in the near future the discovery of how far life can adapt, even under the most extreme conditions, will be learned.

Adapt or Insulate

Animal life varies widely in its tolerance of environmental conditions; some survive in several different climatic areas while others perish when only slightly disturbed from their natural surroundings. Animals like the polar bear, seal, and penguin adapted to an extremely cold environment while the Eskimo had the ability to insulate. Man learned to adapt, live and function over temperature extremes equivalent to a move from the ice cold Antarctic to the hot, humid tropics without suffering ill effects because he is the only animal that can artificially insulate by creating his own environment.

All Life Is Basically the Same

Most all creatures on Earth, with the exception of certain insects, aquatic, amphibian, and microscopic life, are basically the same with respect to anatomy. To prove my point, allow me to select a cross section from the animal world. On one end of the spectrum take the elephant and giraffe and on the other, man and a Mexican Hairless dog. With the obvious exceptions all four creatures are basically the same; one head, two eyes, one nose, one mouth, two ears, one body, four limbs; the brain is on the front end of the body and the excretory systems on the other. Despite the fact that the various species of earth life evolved independent of each other, the similarity apparently holds true and yet there is no logical scientific earthly explanation. There is no evidence or logical reason to believe that the inhabitants of any other planet would not resemble earth life. The only difference would be their position in the scientific and technological evolutionary scale.

TECHNICALLY, WHERE DO WE STAND IN THE UNIVERSE?

Millions, possibly even billions, of years before Earth was created, other planets in various sections of a much older universe were probably being inhabited by intelligent life. Most scientists agree that it is not logical to assume that Earth life is the only life in the cosmos, therefore, it is just as illogical to think that all intelligent life, everywhere, started at the same time.

Frequently, I have been asked why the extraterrestrial beings aboard UFO's do not attempt to contact world leaders. After 25-years of UFO study it seems very clear to me that they do not want to socialize or fraternize with Earth beings, except for experimental purposes. One good guess could be that we are technically inferior to them. Whenever I express that opinion at lectures, the audience becomes indignant. They say that twentieth century man is civilized, educated, and

advanced enough to understand and learn just about anything.

Allow me to take the liberty to present three humorous hypothetical situations to show how far the technological gap between cultures could be.

Example Number One

A meeting between a college graduate from New York City and a native from a comparatively inaccessible area somewhere in the Amazon River Basin of South America. The imaginary conversation could go something like this:

New Yorker: Hello sir, I'm from New York City, population 8,000,000 people, that's in the United States of America. You look like an intelligent man who is able to understand most anything.

Native: Thank you, I think I can. I live here in the jungle, the population is around fifty people.

New Yorker: How do you communicate?

Native: By drum and runner. How do you?

New Yorker: By various methods, the telephone for one.

Native: What is a telephone?

New Yorker: Why that's easy to explain. It's a device for conveying speech over distances by converting sound into electric impulses which is sent through a wire.

Native: What is wire and what are electric impulses?

New Yorker: Well a wire is a piece of metal that has been drawn into a very long, thin thread. An electrical impulse is a periodic variation in the strength of an electric current. Do you understand?

Native: Not really.

New Yorker: You see, a telephone is made up of a transmitter and receiver, often with a dialing mechanism for connecting lines.

Native: Transmitter? Receiver? Dialing mechanism? Electric impulse?

Keep in mind that the preceeding imaginary dramatization was between two Homo sapien sapiens, living on the same planet, at the same evolutionary stage of development. To properly explain the workings of the telephone would almost be an impossible task. How would the New Yorker go about explaining aircraft, cars, trains, television in color, electricity, and so on.

Example Number Two

A meeting between a United States astronaut and an intelligent being on his planet 14,000,000 years behind us in the technological evolutionary scale; about at the Ramapithecus stage.

Astronaut: Hello sir, I'm from the United States of America, population over 200,000,000 people, that's on the Earth. You look like a person who can understand most things.

Primitive being: Thank you, I think I can. I'm from that tree over there, and have no idea as to the population. What is that you are wearing?

Astronaut: It's a space suit.

Primitive being: What kind of animal did it come from?

Astronaut: No animal, this is a synthetic fabric that is manufactured by machine and tested for durability and safety using the most modern technological advances of the twentieth century. Hey, where are you going?

Primitive being: I'm going back to my tree.

Imagine a scientist of the twentieth century trying to communicate with a human being 10-billion years behind on the evolutionary scale. Now Earth man has only been in existence for 14-million years so to be able to demonstrate the vast technological differences, I had to set up an absurd conversation between a nuclear physicist and the leader of an ant colony. In order to do this, we must pretend that the communications gap had been bridged.

Example Number Three

Scientist: We have been watching your day to day operations very closely and have reached the conclusion that you have intelligent characteristics. Now that the communications gap has been spanned I would like to explain our technology.

Head ant: I can understand most anything.

Scientist: Let's begin with the workings of an atomic reactor, alright?

Head ant: I'm ready.

Scientist: The thermonuclear reaction in the sun proceeds very slowly because the type of hydrogen that takes part in the fusion process is the light hydrogen isotope hydrogen-1, also known as protium. Experiments with cyclotrons showed that the heavier isotopes of hydrogen react more rapidly. Got that so far?

Head ant: I thought you said the communications gap had been spanned.

Many people believe the evolutionary time gap theory is why the extraterrestrial beings maintain an isolationist policy. Another explanation might be found by looking back on man's history. During the past, most conquering leaders eventually tried to ease their consciences by attempting to improve the well-being of the occupied, native inhabitants.

On the surface this appeared to be the righteous thing to do, except it didn't work. In almost every instance, accelerated programs designed to improve the life style of the lesser educated people failed. Personal contact with advanced civilizations led to the introduction of disease, warfare, alcohol, and drugs. In some cases it was too much knowledge, too fast, leading tc eventual demoralization and ultimate destruction.

Apparently twentieth century man has learned a few things from his mistakes as I offer the following story as proof. This example could be another reason why technically superior outer-space-beings do not offer world scientists solutions to medical problems, wars, famines, etc.

THE GENTLEST PEOPLE ON EARTH

In 1966 a white hunter and trapper unexpectedly stumbled on a Philippines tribe living the same way as our ancestral stone age cousins did. There were only 24 members of the Tasaday tribe in existence. Ten men, five women, and nine children—all but two were male. Tasadays are dedicated to one mate for life and never take another partner, therefore the fate and the future of the entire Tasaday tribe lies with five couples.

The Tasadays were found living in an isolated rain forest in the southern section of the island of Mindanao in the Philippines. Apparently there were just two reasons why other men did not run across the Tasadays before; the lack of trails to follow and their isolated surroundings. Tasadays travel by swinging and sliding from vine to vine, jumping from rock to rock, and running about on logs. Nature protected them by an impenetrable rain forest surrounded by lofty jagged mountains covered over by unbroken trees standing 200 feet high. It was in their forest sanctuary that primeval Tasadays were born, lived and died untouched by the outside world, until 1966.

When the white hunter discovered the innocent Tasadays he was amazed to learn they had no translatable words in their vocabulary for war, hate, sea, boat, salt, or sugar. Tobacco, pottery, and farming were unknown to them and everything they wanted to save was stored in either leaves or in the hollow of bamboo.

These gentle affectionate people had no hunting or warring weapons nor traps of any kind. Other than what they catch for food from the swift running streams, they never killed an animal or harmed another person; in fact Tasadays never raised a hand to strike another person or even spank a child. As for anger, it just didn't seem to exist. Their diet consisted mainly of tadpoles, frogs, fresh water crabs, small fish, grubs dug out of rotten logs, flowers, berries, and wild bananas.

The Tasadays talked about two other tribes like themselves, Sandukas and Tasanfangs, but they did not

know if the other tribes were still in existence for there had been no contact for a long time. Exactly how long nobody knew because the Tasaday have no method for counting, nor knowledge of time or numbers.

The white hunter and trapper immediately brought them the first vestige of civilization. He taught the Tasadays how to trap and hunt with the bow and arrow; instead of using bamboo knives and stone axes he gave them metal knives and weapons and showed them how to kill deer, wild boar, monkey, and mice.

In June 1971 anthropologists and other men from the space age were allowed to study the small Tasaday tribe first hand. This was a rare opportunity for twentieth century man to observe people living in a period hundreds, maybe thousands, of years in the past. The men of science were excited about the prospects of watching man go through the growing pains on his way to becoming civilized and the process could be accelerated by a little help here and there.

World scientists agreed that by trying to assist the Tasadays with modern knowledge they would not really be duplicating the historical development of man. The only way we could effectively duplicate the process would be by time and observation from afar, allowing nature to take its evolutionary course. That's exactly what was decided.

Philippine's President Ferdinand E. Marcos dedicated a 50-thousand acre reserve for the Tasadays. Man no longer is able to taint the last of the world's innocents because the reserve has been placed off limits to all except those who have the very best reasons.

The Tasadays are the find of centuries and the likes of their unscarred wilderness most probably will never be found again. It is man's responsibility to protect the Tasadays and if science is patient and watches long and carefully, future generations might find out where man went wrong.

I believe extraterrestrial visitors are studying us the way we are studying the Tasadays; from a distance.

widespread intra-galactic communication still remains open. The possibility that other extraterrestrial civilizations would be using conventional radio waves as a means of communication is only a remote possibility. Guessing is about all that can be done at this stage; only time and untiring investigation and listening will supply the answer.

Building Blocks of Life Found

In June, 1971, NASA confirmed the findings of the University of Arizona that a meteorite found in Kentucky definitely revealed the presence of amino acids, building blocks of all living organisms. Amino acids had earlier been detected in the Murchison meteorite that fell in September, 1969. The rock specimen was picked up almost immediately after impact with the ground. This was an unprecedented opportunity to search for organic compounds in an outer space object, not contaminated by earth organisms. Most discovered meteorites have been lying on Earth for some time and eventually wind up on museum shelves. Under the most sterile of conditions the Murchison meteorite was taken apart, using modern techniques. Samples were analyzed for a wide range of organic compounds. A series of seventeen amino acids, six of which are normally found in living cells, were discovered. This information has given rise to strong scientific speculation about the possible existence of life elsewhere. It had far reaching implications because the finding of the amino acids meant that life could form in any solar system, in any star system, anywhere in the universe.

8

UFO Epilogue

PROBING THE SOLAR SYSTEM

Special care has been taken in this book that the contents reflect the latest scientific information relative to UFO's, as of the last publication date. During lectures at colleges and universities, and interviews on radio and television, telephone conversation shows, I come in direct contact with millions of people, of all ages, from every corner of the United States and Canada. I noted the most frequently asked questions concerning UFO's. The answers along with the latest UFO incidents appear here in detail and only the newest UFO or related educational photographs and drawings have been used.

This final chapter is entitled "UFO Epilogue" because it is the closing supplementary section. It's a catch-all for miscellaneous UFO related information, UFO updated sightings, and the search for life elsewhere in the universe.

The United States has already sent space ships to Mercury, Mars, Venus, and Jupiter as well as put men on the moon several times. But where is the new edge of the space frontier?

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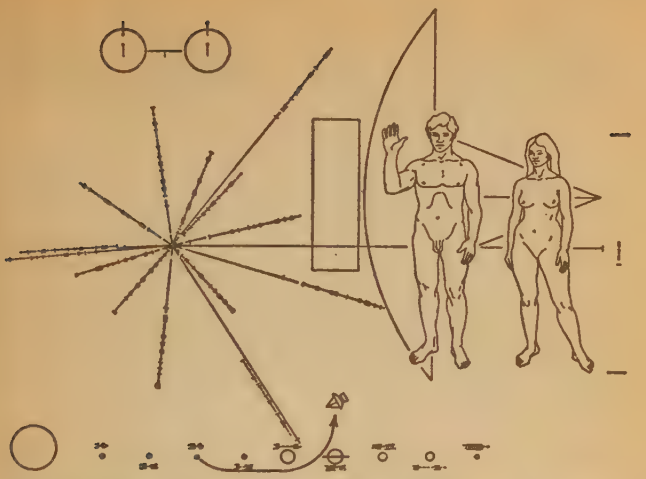
HEAO

As a result of discoveries from a small astronomy satellite launched in 1970 in which scientists located more than 200 sources of X-ray wave-length emissions beyond the solar system, officials of NASA are planning a series of High Energy Astronomy Observatory missions to probe the gamma rays and cosmic rays. Tight budgets have pushed back the schedule for this series to the late 1970s.

Do Scientists Believe There Is Life in Outer Space?

On March 2, 1972, Pioneer 10, the first unmanned spacecraft programmed to leave our solar system, blasted into the dark night skies over Florida. Mounted on the antenna support strut of the craft is a special symbolic message for any extraterrestrial civilization that happens to find it in years or eons in the future. The 6X9 inch, gold-annodized aluminum plaque shows a naked man and woman, the path of the spacecraft, the number and alignment of planets in our solar system, and other technical information hopefully to be interpreted by an advanced society. The mission of Pioneer 10 was to fly by Jupiter in December, 1973, at eighty-one thousand miles, then on to the outer planets, into the vast expanse of our galaxy. The journey is expected to take one hundred million years and cover a distance of one quadrillion, eight hundred trillion miles. About the year eight million A.D., eighty thousand centuries from now, Pioneer 10 will still be traveling within the Milky Way galaxy.

On April 6, 1973, Pioneer 11 blasted off from Cape Kennedy and in March, 1974, without incident, passed through the 150,000-mile wide asteroid belt orbiting between Mars and Jupiter. Pioneer eleven's program is to travel at 31,000-miles per hour and pass within 29,000-miles of the Jovian surface. NASA will then send Pioneer 11 on a five-year trip across the solar system for our first close-up look at Saturn for signs of life.



The aluminum plaque placed aboard Pioneer 10, is science's first open attempt to communicate with extraterrestrial civilizations. It shows the path of the spacecraft, Earth's solar system, the alignment of the nine planets, schematic of two states of atomic hydrogen and a pulsar map depicting the 14 pulsars in the Milky Way galaxy. (Designed by Carl Sagan, Linda Sagan, and Frank Drake.)

Skylab

On May 14, 1973, the United States initiated a different kind of space program (Skylab) placing an unmanned space station into Earth orbit.

On May 25, the first three man crew blasted off from Cape Kennedy to rendezvous with Skylab. They successfully carried out all assigned experiments within 28-days and returned on June 22, breaking the 14-days stay-in-space record held by the crew of Gemini 7.

The second three man team left Earth on July 28, and docked with Skylab in record time. On September 25, the crew returned with a new space-time-record of 59-days, 11 hours.

The third and final crew to visit Skylab lifted off

on November 16, 1973, and returned on February 8, 1974, with a new record of 84 continuous days in space. As they touched down on Earth, the era of U. S. manned space flights came to an end, but the guidelines were being set for the future.

Space Lab

As engineers at Cape Kennedy were being laid-off, a new space program was being planned by NASA and nine European countries (Belgium, Denmark, France, West Germany, Italy, the Netherlands, Spain, Switzerland, and the United Kingdom). They will combine their efforts to build, in Europe, a $400-million vehicle named Space Lab. It will be designed to carry seven scientists within the cargo bay of the space shuttle for launch in 1980.

RAE. The Radio Astronomy Explorer satellite launched in 1973 holds an orbit 680 miles above the moon. It monitors low-frequency radio signals from Jupiter, the sun and other galaxies. From the first RAE satellite, which was launched in 1968, astronomers were able to make a low-frequency radio map of the Milky Way.

FUTURE SPACE PROBES

What are the planned programs? How will the search for intelligent life in outer space be carried on?

Project Viking

In August, 1975 .... NASA's $1-billion Project Viking, two unmanned spacecrafts, will be fired aloft from Cape Canaveral. After 11-months, the Vikings will swing into orbit around Mars and make all the measurements accepted as usual in space exploration. After the initial phase has been completed each spacecraft will release a lander, housing life-seeking laboratories. The first sterilized package is programmed to touch down on July 4, 1976, near the mouth of the

3000-mile-long gorge that cuts across the red planet like a Martian Grand Canyon. The other probe is scheduled to land near the north polar cap. Both sites have been chosen because it is suspected that traces of water are present.

The landers are not designed to find trees, elephants, or space monsters, but to simply analyze the Martian soil for microscopic life. Inside the landers will be miniaturized laboratories equipped to analyze and test the Martian soil and radio the results back to Earth. Each small laboratory costs $16.9-million and is crammed with:

- a small xenon lamp to simulate sunshine
- 1 hand sized chromatograph to identify the chemical components of the substance under study.
- 140,000 electronic components
- 122,000 transistors
- bottled radioactive gases
- 3 small ovens
- 40 thermostats

If Viking fails to detect life on Mars there is always the possibility that it could be deeper in the ground or in other areas. If even the most primitive organism is found, it will help confirm what many scientists have suspected; that life is not unique to just Earth and is probably commonplace throughout the entire universe.

Twin Mariner spacecraft are scheduled for launch in 1977. Their mission will be to pass the giant planets of Jupiter and Saturn. Special instruments have been designed to search for life-supporting chemicals in the two planets' atmospheres.

The one chemical compound that the Mariner will be hunting is pyrimidines. These are the basis for nucleic acids, which carry the genetic information for life.

Tentative plans have been made between the United States and Russia for a joint Apollo-Soyuz

space mission scheduled for launch on or about July 15, 1975. Two Russian cosmonauts will blast off from the Soviet Union and a half hour later, three American astronauts will lift off from Cape Carnaveral.

Both craft are scheduled to link up 15 hours later, 130 miles over Earth. Crews will work together on scientific projects, going between command modules. The Russians will stay in space for about 6-days while the United States team's stay will be 10-days.

LST. The Large Space Telescope, which is to be put in orbit in the early 1980's, will enable scientists to gaze deep into space—possibly to the edge of the cosmos. This unmanned telescope in Earth orbit should provide astronomers with information about stars which are 100 times fainter than those that can be seen by the most powerful ground-based optical telescopes.

Space Shuttle

Man is expected to land on the surface of Mars by 1980. However, a trip of this kind is based on the development of a reusable Space Shuttle capable of carrying thousands of pounds of cargo into Earth orbit and return. Such a craft has already been developed by Rockwell International of California. These craft will be called "Orbiters" and will be launched on their test flights by mid 1976. The Orbiter will be capable of carrying 65,000 pounds of cargo and passengers in an area the size of a freighter's hold. The booster rockets will drop into the ocean, where they will be recovered to be used over again. Upon return to Earth, the giant Orbiter will land just like an ordinary airplane. Between 1980 and 1990 NASA is planning over seven hundred test flights with the Orbiter.

Since 1958, more than 125 scientific probes have been sent into space. Some have traveled hundreds of millions of miles, sending back close-up views of the planets Mars, Jupiter, Venus, and Mercury. Other satellites have focused their instruments on the Earth, the moon and the sun.

Before the close of the century, American spacecraft will have explored all the planets in the solar system, many of their major satellites, and a variety of comets and asteroids. If intelligent forms of life are out there, then it is just a matter of time, distance and technology. Contact is imminent; maybe sooner than expected.

ASTRONAUT SIGHTINGS OF UFO's UNEXPLAINED

On October 4, 1957, the U.S.S.R. launched Sputnik I, the first man-made satellite to orbit Earth. The little 23-inch in diameter sphere, weighing 184 pounds reached an altitude of 588 miles and stayed in orbit for 58 days.

Nearly four months later, on January 31, 1958, the United States sent Explorer I into Earth orbit. In comparison to the Russian satellite, America's bid seemed rather small. Explorer I was only six-inches in diameter and weighed just 31-pounds, but during its 112-days in space it gave science the first information about the existence of a radiation belt that surrounded the Earth.

Next the Moon

The first United States attempt to send a spacecraft to the moon failed on October 11, 1958. Pioneer I didn't reach its objective but became the "first space probe" when it established a new altitude record of 70, 717 miles above Earth.

The Russians demonstrated their space superiority when on September 12, 1959, Lunik II hit the moon right on the mark just 36-hours after launch. On October 4, 1959, they did it again but not before Lunik III sent back the first pictures of the far side of the moon.

Pick Up the Challenge

The handwriting was on the wall, either the United States was to compete or settle for second place

and acknowledge the Russians as the uncontested space leaders. Early in 1961, President John F. Kennedy made a promise to the world that not only would the United States be the first country to put a man on the moon but the event would take place before the end of the 1960's. The space race was on but few scientists believed such a feat could be possible in such a short time.

Mercury-Redstone

The first American in space, Alan B. Shephard, Jr., was launched into a 15-minute, 22-second suborbital flight on May 5, 1961, on board Freedom 7. On July 21, 1961, Liberty Bell 7, blasted off with Virgil I. Grissom at the controls. Grissom stayed in space 17-seconds longer, however after splashdown the spacecraft sank.

Mercury-Atlas

Friendship 7 lifted-off on February 20, 1962, and John H. Glenn, Jr., became the first astronaut to be sent on a three-orbital mission. The flight lasted 4-hours, 55-minutes and 23-seconds, establishing a new world space record.

First Report of a UFO in Space

Mercury-Atlas 9 (Faith 7), blasted off with Leroy Gordon Cooper, Jr., headed for a 22-orbital flight to evaluate the effects on man during a full day in space. The mission that started on May 15, 1963, lasted a total of 34-hours, 19-minutes and 49-seconds. It was during Cooper's 22nd orbit over Australia that he reported by radio that he was observing an unidentified green object with a red tail out in space. After he returned to Earth and underwent a debriefing the UFO report was officially denied by not only NASA but also Cooper. Even though the sighting was heard all over the world the explanation for the report was merely that it was the result of a garbled story of something sighted from the ground in Australia.

Gemini-Titan

The next phase of the space program was designed to carry two men into space on board a single spacecraft for extended periods of time. Docking and rendezvous procedures were to be developed along with (EVA) extravehicular-activity experiments while in space.

More UFO's Sighted

GT-IV lifted off from Cape Kennedy on June 3, 1965, with astronauts James A. McDivitt and Ed White on a 62-orbit, four-day mission. This was to be the first time an American took a 20-minute walk in space.

The first two sightings by McDivitt occurred at 3 a.m. (CST) on June 4, 1965, somewhere over the Pacific Ocean. McDivitt took one still photograph and ran several feet of black and white motion picture film of the object he described as a cylinder with an arm-like protuberance.

NASA at first denied anything showing up on film but later released a photograph consisting of three motion picture frames showing an oval object with some kind of trail. McDivitt stated that he did not think that the photographs released by NASA were of the object he had seen. He personally examined the rest of the film and said he found a hazy image which he believed was of the sighted object. That photo has never been released. The North American Air Defense Command (NORAD), explained away the UFO photograph as that of the Pegasus satellite. McDivitt, to this day, does not accept the official explanation because after analysing NORAD's space debris computerized tracking reports for the time of his sightings, the Pegasus satellite was 1,200 miles away and no other satellite or miscellaneous space debris was in the vicinity of his capsule.

(EN) Official spokesman for NORAD, which keeps track of all man-made objects orbiting the

Earth, recently announced that outer space is beginning to look like a junkyard. More than 3,200 objects including satellites and miscellaneous debris are presently circling the globe.

Following the old adage "what goes up must come down," the space junk is falling back to Earth at a rate of a piece a day, however almost all of it burns up before reaching Earth from atmospheric friction. The odds against anyone being hit are incalculable.

A second UFO was seen by McDivitt during the 51st-hour of the mission. He reported seeing a bright, star-like object passing above the capsule at the lowest point of the flight about 100 statute miles, in a south to north orbit. No mention has ever been made of a photograph in connection with the second sighting.

More Astronauts Sight UFO's

Gemini-Titan VII lifted off the pad on December 4, 1965, with astronauts Frank Borman and James Lovell on the longest Gemini flight to that date, 206 revolutions; 330-hours, 35-minutes and 31 seconds. Their mission was to provide a rendezvous target for the Gemini VI-A crew of Schirra and Stafford.

At the beginning of the second orbit, December 4, Borman radioed a report to the Capsule Communicator at the Houston Flight Control Center that he was observing a "bogey at 10 o'clock high," flying in formation with their spacecraft. Borman was asked to clarify and repeated that this was an "actual sighting" of something other than the GT-VII booster rocket, which was visible separately at the 2 o'clock position.

During the press conference no description of the UFO was released, nor any mention of photographs taken by Borman or Lovell. For some unexplained reason, none of the newsmen asked about the UFO report—at least not on the record.

NASA is still unable to account for the observation in terms of known satellites or stray fragments be-

cause nothing was in the vicinity at the time of the sighting.

Aviation Week and Space Technology Magazine speculated that the "bogey" was the transtage of a USAF/Martin Titan 3C launched in October 1965. A NICAP analysis, based on orbital data ruled that out. The minimum separation of the Gemini VII and the transtage was about 255-miles. The size of the transtage is about 10 by 15 feet. Seeing an object of that small size at 255-miles would be like seeing a panel truck in New York City from the Washington Monument.

The Sightings Continue

On September 12, 1966, Charles Conrad and Richard Gordon established a new altitude record of 739.2 miles on board Gemini-Titan XI.

During the 18th orbit over Tananarive, Madagascar, Conrad reported observing a large unidentified object and both astronauts took pictures. NORAD identified the UFO as the Russian Proton III satellite, however at the time of the sighting it was more than 280-miles from the capsule. Proton III was estimated to be about 10-feet in diameter and its booster rocket about 33-feet in diameter at the largest section. Analysis of the photographs show "four distinct objects" which were explained away as pieces of Proton III including possibly its booster plus two other components.

NICAP disclosed that a scientist computed that an object 33-feet in diameter, 280-miles distance would be 1/10 of a minute of arc in angular size. Normal visual acuity under favorable conditions can only distinguish an object 2-minutes of arc or larger; in other words something 20-times bigger than the Proton III is what the astronauts saw in space.

A Promise Fulfilled

On July 20, 1969, man achieved the long awaited dream of setting foot on the surface of the moon. Apollo-Saturn XI blasted off from Cape Kennedy with

(*cont'd on p. 174*)

Mercury-Redstone

Mercury-Atlas

Gemini-Titan

Saturn IB

Saturn V

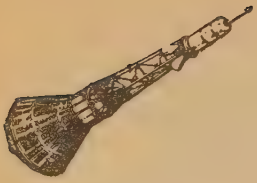
Saturn V Nasa-developed three-stage launch vehicle: first stage (S-1C) by Boeing, 138 feet by 33 feet. RP-1 and LOX for 7.76 million pounds of thrust; second stage (S-11) by Rockwell, 81.5 feet by 33 feet. LH_2 and LOX for 1.15 million pounds of thrust; third stage (S-1VB) by McDonnell Douglas, 59.3 feet by 21.7 feet, with adapter. Apollo spacecraft and launch escape system. Saturn V stands 363 feet high.

Saturn 1B NASA-developed two-stage launch vehicle: first stage (S-1B) by Chrysler Corp., 80.3 feet high and 21.4 feet in diameter, burns RP-1 and LOX to produce 1.6 million pounds of thrust; second stage (S-1VB) by McDonnell Douglas 58.4 feet high and 21.7 feet in diameter burns liquid hydrogen and LOX for 200,000 pounds of thrust, instrument unit by IBM is 3 feet high, 21.7 feet in diameter, with aft interstage, Apollo spacecraft and launch escape system. Saturn 1B stands 224 feet high.

Gemini-Titan modified Air Force missile manufactured by Martin Company: two-stage rocket 10 feet in diameter and 90 feet high (109 feet with spacecraft) burning Aerozine 50 and nitrogen tetroxide to produce 430,000 pounds of thrust in the first stage, 100.000 pounds of thrust in the second.

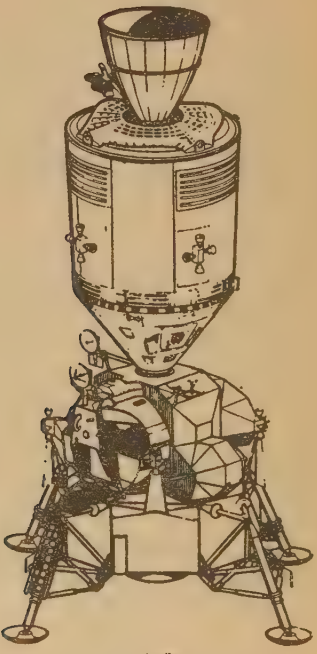
Mercury-Atlas modified Air Force missile manufactured by General Dynamics: stage-and-a-half rocket 10 feet in diameter (16 feet at base) and 67.3 feet high (95.3 feet with capsule and escape tower). Burning RP-1 and LOX to produce 308,000 pounds of thrust from the booster engines (2) and 57,000 pounds of thrust from the sustainer engine.

Mercury-Redstone modified Army ballastic missile manufactured by Chrysler Corp., single-stage rocket 70 inches in diameter and 59 feet high (83 feet with capsule and escape tower) burning alcohol and liquid oxygen to produce 78,000 pounds of thrust.



Mercury

Gemini



Apollo

Drawings indicate relative sizes of spacecraft.

Mercury set the trend for U.S. spacecraft design in the first decade. The one-man capsule was 6 feet 10 inches long. (26 feet with its launch escape tower) and 6 feet 2½ inches in diameter. It weighed about 2990 pounds in orbit. The blunt end was covered with an ablative heat shield to protect against 3000 degree re-entry heat. The capsule was built by McDonnell Douglas Corp.

Gemini also was built by McDonnell Douglas. The two-man craft was an enlargement of the Mercury vehicle, but experience had shown that much equipment could be placed outside the pressured cabin and left behind at re-entry. Gemini propulsion systems allowed changes in orbit, as well as re-entry maneuvers for pinpoint landdings. The spacecraft was 19 feet long, 10 feet in diameter, and weighed about 8400 pounds.

Apollo command and service modules bridge the first decade of American manned space flight with the second; they served both Skylab and Apollo/Soyuz Test Project planners. The service module extends the Gemini concept of locating in a separate package the equipment and supplies not needed for re-entry, and the three-man command module retains the ablative heat shield of Mercury and Gemini. The command module is 10 feet 7 inches high (to top of apex cover) and 12 feet 10 inches in diameter. Its 33-foot launch escape tower is jettisoned before orbital insertion. The service module is 24 feet 9 inches by 12 feet 10 inches. Both modules are built by Rockwell International.

Apollo lunar module (LM) operated only outside the atmosphere. Its shape therefore was dictated by its job of taking two men safely to and from the Moon's surface. The LM was 22 feet 11 inches high with legs extended, 31 feet in diameter (measured diagonally across extended landing gear). Nominal earth orbit weight of the three Apollo modules was 100,600 pounds. Grumman Aerospace Corp. built the lunar module.

(*cont'd from p. 169*)

astronauts Edwin E. Aldrin, Neil A. Armstrong, and the pilot of the command module Michael Collins. At 10:56 (EST) Armstrong stepped onto the surface and said, "That's one small step for man, one giant leap for mankind." The United States commitment had been fulfilled.

How Many UFO's Have Been Seen?

Within a period of 15-months, during 1965 and 1966, American astronauts reported unusual UFO sightings on four separate space missions. Exactly how many others have seen UFO's will probably never be known. Astronaut John W. Young, the 9th American to set foot on the moon summed it up when he stated that he believes that UFO's do exist. During an interview he said, "If you bet against it (the existence of UFO's) you'd be betting against an almost sure thing. . . ."

ANGEL'S HAIR

A mysterious substance which has been indirectly linked to UFO's is a spider-web-like material that has been nicknamed "Angel's Hair." Witnesses have observed it falling from the sky, sometimes in great quantities, but only in about half the cases have UFO's been seen at the same time.

One of the first cases of Angel's Hair goes back to September 21, 1941. For several hours great quantities of a spider-web-like material fell from the sky over Bradley, England. No UFO was reported in that particular incident.

On October 17, 1952, several witnesses in Oloron, France, reported a web-like substance falling from an unidentified, globe shaped, flying object.

Residents of Trinidad and Rio Dell, California, plus other northern California towns reported showers of cobweb-like material on November 9, 1958. They said some of the strands were five to six feet long.

Two fishermen at sea said a spider-web-substance

settled on their boat in such quantity that it made it appear to be "a million years old."

Angel's Hair strands up to forty feet in length were draped over trees and wires in and around McKinleyville Airport. (Witnesses eliminated the possibility of its being a mold growth or animal product or a spider web.)

In the summer of 1957 three witnesses reported "a skyful of cobwebs" three miles off the coast near south Miami, Florida. One of the witnesses, Craig Phillips, a trained biologist and at the time, curator of the Miami Seaquarium, picked up a number of the strands and carefully placed them inside a mason jar allowing them to cling to the inside before capping it. Upon arrival at his laboratory he uncapped the jar but no trace of the web material could be found.

On the afternoon of October 22, 1973, a suburban housewife in Sudbury, Massachusetts, witnessed web-like materials hanging from bushes and wires. The strange material was falling from a shiny globe-shaped silvery object that was moving east to west. She watched the UFO until it disappeared over some trees. The witness' educational background in biology and chemistry went into service as she rushed into the house and made a funnel from a piece of construction paper and began collecting the mysterious substance. She capped the Angel's Hair in an air-tight container and placed it under refrigeration. She described the web-like material as thicker than a spider web, sticky to the touch, and becoming entangled when disturbed.

When her neighbor arrived at home about four o'clock that afternoon she called her over to see the material. A few strands of wispy material were still floating into the yard. It was hanging from the telephone wires, was on the ground, and covered the car; in fact, it was all over the neighborhood.

The housewife took the unidentified substance to the University of Massachusetts, where they confirmed that it was definitely not the web of a spider. When the Angel's Hair was placed under a microscope two days

after the incident, it appeared semi-translucent and it was diminishing.

A check of the area showed that no research or weather balloons were in the region and that no fiberglass or asbestos plants were located anywhere in New England.

In December, 1973, a resident of Silver Springs, Maryland, stated that at about 6:45 in the morning he saw what he thought was a giant spider web covering a wide area over bushes and grass in his back yard. The witness later reported that the route from suburban Silver Springs to Washington, D.C. through Rock Creek Park was covered with a considerable amount of the web-like substance.

The reported dissipation of Angel's Hair is common. True Angel's Hair becomes a will-o'-the-wisp which disappears before it can be properly analyzed and therefore does not constitute good physical evidence. At this point in time the results of the research completed on Angel's Hair are inconclusive.

FLIGHT CREW OBSERVES UFO NEAR TALLAHASSEE

On the evening of November 12, 1973, a Southern DC9 crew was notified by the Tallahassee FAA tower that an unidentified flying object was under observation. During the next half hour, the UFO was sighted by other FAA, airline, and military personnel.

Captain R. C. Cook and his crew were leaving Tallahassee for a ferry flight to Atlanta when the tower reported the sighting to hem.

Flying time and fuel limitations precluded observation of the UFO other than in the course of the ferry flight's intended plan. Nevertheless, the events and the report submitted by Captain Cook are of such interest that his report follows:

"While we were deplaning our passengers and cargo from charter 730, one of the Tallahassee FAA personnel came over. He said that the tower had seen a

UFO pass over the city doing approximately 2,200 mph at 3,000 ft.

"About 10 minutes later we taxied out to runway 36 with a clearance to Atlanta and I asked the tower if they still had the object in sight. They said they still had visual contact and the object was southwest of the field and low over the trees. I requested a clearance for a left turn to a 240 degree heading after take-off.

"Just after completing our turn we sighted a round, glowing object, low on the horizon and climbing away from us.

"The object was a spherical, glowing light. The brilliance of the glow was pulsating from the very bright to quite dim but was always visible. The color would drift from bright red to white and occasionally we would see some light yellow or green. I would estimate our distance from it to be approximately 15-miles and this distance remained constant throughout the entire event.

"We continued our run in a southwesterly direction, climbing to our assigned altitude of 20,000 feet and following the glowing object.

"Jacksonville Center asked us to contact Tyndall Approach Control as they also had visual contact with the object.

"Tyndall Approach confirmed they had the object visually and requested that we contact Panama City as they also had it in sight and wanted to talk to us about it.

"As we leveled at 20,000 feet, about 10-miles northeast of the Panama City airport and just north of Tyndall, the control tower said they could not only see our object but two of their own, low over the bay, and asked if we could see them.

"From our altitude we could not pick them up; our object was now crossing the shoreline, heading out over the Gulf. Pursuit was not prudent and I requested clearance to Atlanta.

"We immediately received the OK, executed our turn, and noticed the object had also reversed its course

and was now following us northbound. As we began our descent I asked Jacksonville Center to alert their people in hopes that they might continue the observation."

SUMMATION

No man can yet prove that other life lies beyond Earth. Only a few years ago, to even suggest that there was other life in the universe was a sure sign of madness. The latest scientific discoveries have changed much of that kind of thinking.

If just one out of every 100,000 stars in our galaxy has a solar system with some type of life, intelligent or otherwise, then we could have over a million inhabited neighbors. Multiply that figure times the billion or more galaxies and the number of possibilities becomes astronomical.

Professor George Wald, Nobel laureate and professor of biology at Harvard and Professor Richard Berendzen, an astronomer from Boston University have both expressed a belief in other life. Professor Wald stated, "I think there is no question that we live in an inhabited universe that has life all over it."

Everyday the evidence mounts that there is other life outside our own infinitesimal dot in the universe. The question is no longer IF . . . but rather WHERE.

ABOUT THE AUTHOR

JOHN WALLACE SPENCER, born in Boston, Massachusetts, in 1934, is not only a well-known lecturer and author but is also the owner and manager of the Phillips Publishing Company. He has worked as a postal inspector, newspaper editor, general manager of several radio stations, public relations director, television and radio announcer, salesman, teacher and lecturer. Mr. Spencer has lived and worked in Massachusetts, New York, Mississippi, Tennessee, New Jersey, Iowa, Connecticut, England and Germany, and has gained a reputation as a man who follows the action.

The author began his study of UFO phenomena shortly after the end of World War II. He continued to gather UFO data during the ten years (1952–1962) he was on active duty with the United States Air Force, assigned to the North American Air Defense Command (NORAD). He was also an official investigator for the world famous UFO research organization, the National Investigations Committee on Aerial Phenomena (NICAP).

Mr. Spencer became interested in the "Limbo of the Lost" area in the early 1960s. Through his research, a fascinating pattern began to unfold, compelling him to dig further into the subject. His newest book, *No Earthly Explanation,* gives his educated explanation for what is responsible for the mystery.

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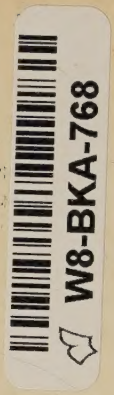

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